HURRICANE KATRINA

AFTER ACTION REPORT AND RECOMMENDATIONS

Emergency Support Function 8 Health & Medical

State of Mississippi

Collaborative Assessment and Development by

North Carolina Division of Emergency Management

North Carolina Division of Public Health

North Carolina Office of Emergency Medical Services

June 1, 2006

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June 1, 2006

Brian W. Amy, MD, MHA, MPH
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Dear Dr. Amy:

On behalf of the North Carolina Emergency Support Function (ESF) 8 Health and Medical Personnel, I would like to offer sincere thanks for the opportunity to engage North Carolina's responders in the assessment and evaulation of Mississippi's ESF 8 response to Hurricane Katrina. This endeavor has afforded North Carolina State Medical Response System personnel with key insight and knowledge from information shared by your team and Mississippi's residents. Partnering between our states has shared experience, plans, and best practices among responders reciprocally and facilitated a network for the development and implementation of a more robust response effort in the future.

Our hopes are that the information crafted in this document will assist you and your team to construct an effective Performance Improvement plan and guide your state leadership in the quest for funding sources, legislative action, and other preparedness efforts. It is with great pride in our past partnerships and future plans that we release this document to the Mississippi Department of Health. We look forward to more partnerships as we too progress in our preparedness efforts. The dedication and determination of Mississippi's people and their government is in fact phenominal and full of many successess. Perhaps the most obvious lesson learned is that your most valuable asset lies with Mississippi's will to recover and your incident command staff's passion to assist in that recovery.

Together, as we prepare for this hurricane season, please know that the State of North Carolina and it's ESF-8 assets stand ready to assist the great state of Mississippi should the need arrise.

Sincerely,

H. Hoffman RN MSN

Holli Hoffman RN, MSN
North Carolina Hospital Preparedness Coordinator
North Carolina Office of Emergency Medical Services

ACKNOWLEDGEMENTS

I would like to thank both the responders and citizens of the state of Mississippi for their hospitality, and for this dynamic opportunity to take a comprehensive look at the medical response rendered to victims of Hurricane Katrina. It is also my pleasure to extend my deepest gratitude to those who sacrificed their time to contribute to this After Action Report. The passion of the medical response system to provide access to healthcare in disasters is reflected in this effort by both states.

The following agencies graciously provided staff for this report:

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North Carolina Office of Emergency Medical Services
North Carolina Public Health Regional Surveillance Teams
Office of the State Medical Examiner
Duke University Medical Center
New Hanover Regional Medical Center
University of North Carolina at Chapel Hill
Alamance County Health Department

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Introduction

I. Katrina Response

On August the 23, 2005 hurricane Katrina formed over the Bahamas and progressed to the southern tip of Florida as a Category 1 storm before making a second landfall on August 29 at 11:00 AM in southern Mississippi as a category 3 storm. The storm did not lose hurricane strength until it reached Jackson, MS 150 miles inland. This storm created a storm surge of 37 feet was recorded with wind speeds sustained at 175 mph. Katrina devastated areas 100 miles from its center creating chaos and havoc in large expanses of landmass across the gulf counties and inland Mississippi. The storm is estimated to have caused 115 billion US dollars in damages and a death toll of 238 people for the state of Mississippi.

On August 25, 2005 Mississippi Department of Health, Division of Health Protection, Office of Planning and Response began ramping up by notifying their healthcare facilities of the impending threat of hurricane Katrina and putting all Emergency Response Coordinators on stand by for possible activation.

The Mississippi Department of Health, Health Protection division had a designated Command Center in Jackson, Mississippi at the main office just blocks from the State Emergency Operations Center housed within Mississippi Emergency Management Agency. Initial contact was set up between MDH and MEMA concerning operational periods and activations.

This document is focused on the Emergency Support Function 8 Health and Medical section of the National Response Plan and the Mississippi Comprehensive Emergency Response Plan roles and responsibilities. The assessment and recommendations are solely based on performance measures associated with ESF 8.

II. Collaborative Assessment

State Medical Response Systems nationwide have been forced to review and revise their emergency preparedness programs based on hurricane Katrina and the devastation to the existing medical infrastructure. Many questions have emerged challenging health and medical responders to re think normal operations and begin true catastrophic planning versus incident based response. The Department of Homeland Security and the United States Department of Health and Human Services has been working on the Universal Task List assigning specific performance measures to individual events. This formed the basis for catastrophic planning and thus the Target Capabilities Task List was born addressing the issues faced in large scale events.

Mississippi Department of Health (MDH) had been planning and preparing with Region IV and notably the North Carolina Office of Emergency Medical Services addressing many emerging issues prior to hurricane Katrina and thus had a working relationship. North Carolina mobilized its' State Medical Assistance Teams and deployed over 500 healthcare personnel to treat approximately 7500 patients in a tent facility in Waveland, Mississippi. Personnel from North Carolina were familiar with the challenges faced by the gulf communities of Mississippi and the lay out of the MDH operational structure. This familiarity and working relationship became the foundation for the joint partnership between the two states

Mississippi Department of Health requested North Carolina to construct a team of specific personnel to assess the response effort of the ESF 8 section and to make recommendations utilizing a multi agency approach. It was determined that the TCL performance measures would also give an overall view of the Mississippi ESF 8 goals for the future and move all responders interviewed towards the TCL targets for future planning. The Target Capabilities Task List (TCL) was chosen to maintain focus on the performance measures identified for catastrophic planning and to begin development of a more specific, measurable, and obtainable performance improvement plan.

The team was selected to perform the assessment from North Carolina and included key personnel, each specializing in specific areas. The directors of the North Carolina Division of Emergency Management, North Carolina Office of Emergency Medical Services, and the North Carolina Division of Public Health Office of Public Health Preparedness and Response met to discuss the project and determined it would be of great benefit to North Carolina to commit the team to this effort. Each agency selected their key personnel, dates for the on site interviews in Mississippi, and the methodology. Personnel from other state, regional, and local agencies were selected to further specialize and diversify the expertise. Hospital, EMS, Health Department, laboratory, medical examiner, epidemiology, environmental health, private practice, and regional response teams were all represented on the assessment team. These include Physicians, Nurses, Paramedics, Medical Laboratory, X Ray, statisticians, academics, and administrative personnel.

The TCL was converted into an online survey for quantitative results and further supported by key interview selection of specific personnel for qualitative data. The surveys were split into two main sub groups, Mississippi Response Personnel and Mississippi residents to survey the perspective of both those rendering care and those receiving care to analyze key differences in perception of the groups. The online survey was offered to the responders prior to the teams' arrival to the state. Key responder interviews were scheduled and carried out over three days in four counties for a comprehensive look into the issues identified by the online survey. At the conclusion of each interview day responders were asked to attend a round table for open dialogue and further discussion of the issues as a group.

This document is a guide through the quantitative and qualitative data obtained during these assessments. Issues identified will include those identified by the responders and the residents of Mississippi. All issues are specific to the TCL goals and performance measures. All staff participating in this assessment noted that this after action review based on the TCL was an enriching experience and in depth look into where both states need to be focusing attention and felt this prepared them for the oncoming season with a more focused perspective on planning and preparedness. It is with great hope and expectation that the results of this assessment will also assist other states in their preparedness efforts and provide guidance for local, regional, state, interstate, and federal response efforts.

Responder Survey

I. Goal

The After Action Review (AAR) will capture the major points of what worked well and what didn't work well during Mississippi Department of Health (MDH) response to hurricane Katrina. These points will be identified so that MDH can include these in a Performance Improvement Plan. Additionally, AAR information will have a direct impact on the rewrite of the MS State Emergency Operations Plan. The U.S. Department of Homeland Security Target Capabilities List will serve as the framework for data collection and analysis. We obtained feedback from three populations—community/citizens, and medical and public health personnel through surveys, interviews, and a community assessment.

II. Methods

MDH requested NC Division of Emergency Management conduct the department's Hurricane Katrina AAR. NC Division of Emergency Management involved the Office of Emergency Medical Services (OEMS) and Office of Public Health Preparedness and Response (PHP&R) in the effort. These offices requested data collection and analysis and reporting consultation the North Carolina Institute for Public Health (NCIPH), University of North Carolina at Chapel Hill School of Public Health.

Data Collection Framework

The U.S. Department of Homeland Security created the Homeland Security Target Capabilities List version 1.1 which defines 36 capabilities (measures) that represent prevention, protection, response, and recovery tasks or responsibilities. Staff from the MDH, OEMS, PHP&R and NCIPH decided to use the TCL framework to create data collection instruments for the MS Katrina AAR. (See Appendix A: AAR Team Composition) The group also decided to collect data through an on-line survey to all Katrina public health and medical responders, key responder interviews with selected public health and medical responders, and community rapid needs assessment in three locations. OEMS, PHP&R and NCIPH worked together as the NC Team to develop all data collection instruments through consultation with MDH. This section will present the methods for the on-line survey and key responder interviews. The community assessment is presented in a separate section.

NC Team members reviewed all 36 Target Capabilities List for relevance. Staff with expertise in Emergency Support Function (ESF) 8, public health and medical services, reviewed each capability and identified those with general relevance to ESF 8, such as Planning, and those capabilities for which public health and medical services has primary responsibility; for example, public health epidemiological investigation and laboratory testing. All capability areas, with the exception of recovery capabilities, were included in the data collection framework. Recovery capabilities were not included as these were not of primary interest to this AAR. ESF 8 capability and performance measures were identified for each relevant Target Capability. The NC team chose to use the performance measures for data collection as these are specific qualitative or quantitative benchmarks. Further, if a capability measure had not have been in

place, the tasks required to satisfy each performance measure under the Target Capability could not be fulfilled.

On-Line Survey Instrument Development

The NC Team created a survey instrument with a section for each Target Capability and the corresponding performance measures. The first item in each section asked respondents to indicate if they were part of MS Katrina response in that Target Capability. Respondents who answered "yes" to this item were then asked to rate if the performance measure within the Target Capability was completed, with "yes", "no" and "unknown" being the allowed response choices. If a respondent indicated "no" for the completion of a performance measure, the respondent would be asked to indicate why the performance measure was not achieved.

The survey also included a respondent job background section with items on respondent role in his/her daily job, daily workplace, length of service in current job, workplace during Katrina response, and job function (within emergency management framework) during Katrina response. Additional items assessed how much experience the respondent had with the assigned job function during Katrina response and how well prepared respondents thought they were for their assigned job function during Katrina response. The final survey item asked this latter question of respondents a second time.

On-line Survey Implementation

NC OEMS used its Internet server capabilities to provide Internet survey hosting and access. The NC Team and MDH tested the on-line survey and created an e-mail message inviting medical and public health responders to complete the survey. MDH provided e-mail addresses for 60 individuals, which NC contacted to complete the survey. MDH sent the survey message and link to 2200 employees of public health, 117 hospitals, and over 100 ambulance service providers. The survey was available on-line from February 8 through March 8, 2006.

Key Responder Interview Protocol Development

The purpose of the key responder interviews was to gain more in-depth information about MDH performance in the identified Target Capabilities. A key responder was defined as an individual who had a leadership or management role in MS response to Katrina, a key partnership role, such as a federal employee or other state employee, or the individual was a MS state employee who had considerable first hand experience with MS response to Katrina. Using the on-line responder survey as an outline, the NC Team created a key responder interview protocol. (See Appendix B Key Responder Interview Protocols**)** The interview protocol included the same job background and Katrina response function and duty station items as the on-line survey. The protocol also included an item that asked interviewees which Target Capabilities had direct experience with during Katrina response. Direct experience was defined as: the Target Capability was part of the respondent's daily function or area of responsibility and/or the respondent had first hand knowledge of how this Target Capability was handled during Katrina response. As with the online survey, the interview protocol had separate sections for the Target Capabilities of interest. For each Target Capability, there were the following questions:

- Please describe how the target capability was implemented.
- What worked well in the implementation of the target capability?
- What did NOT work well with target capability implementation?
- What needs to be improved in this target capability?

To focus interviewee response and maximize the congruence in the data collected between the on-line survey and the key responder interviews, the interview protocol included prompts for each Target Capability. The prompts used were the verbatim on-line survey Target Capability performance measures. In other words, for each Target Capability section, on-line survey performance measures questions were used as interview prompts. Interviewers were instructed to use the prompts during the interview if the interviewee could not focus his or her response and to ensure that appropriate performance measures were addressed.

Key Responder Interview Protocol Implementation

Sample—MDH identified key responders in the following categories: 73 public health employees; 13 medical responders; 16 federal employees; 19 state and local government partners; and 12 individuals who participated in Katrina response from other states. MDH provided the names and contact information for these individuals to the NC team. The NC team contacted the potential interviewees to schedule interviews during the on-site data collection week in February 2006.

Interviewers—Interviewers were members of the NC Team and came from OEMS, PHP&R, the Public Health Regional Surveillance Teams, NCIPH, and the NC Office of Chief Medical Examiner. Interviewers had experience in either medical or public health response or technical expertise in a medical or public health target capability. As a group, interviewers represented expertise in all Target Capabilities included in the interview protocol. Interviewers participated in 2 trainings on the key responder interview protocol; not all interviewers participated in both trainings.

Interview Scheduling—The NC Team scheduled interviews with the interview participants, dividing the interview participants into medical or public health response categories. The NC Team attempted to identify Target Capabilities in which key responders would have had direct experience. Additionally, interviewers were categorized by Target Capabilities in which they would have knowledge or expertise. When possible interviewers and interviewees were scheduled or matched for interviewer expertise and interviewee direct experience with a specific Target Capability. For example a coroner key responder was matched with the NC Assistant State Medical Examiner interviewer for Target Capability Fatality Management.

On-site Data Collection (Interviews and Community Assessment)

Eighteen NC Team personnel deployed to MS in February 2006 to conduct key responder interviews and 2 community assessments, 1 in the Jackson area and 1 in a rural area. Fourteen team members conducted key responder interviews and 4 team members implemented the community assessment. One team member conducted interviews and implemented the

community assessment. A third community assessment was conducted in a coastal area in March 2006.

Interviews occurred at health department buildings in conference rooms, offices or cubicle offices. Interviewers conducted interviews primarily in-person; several interviews, however, were conducted via telephone. The key interview protocol was loaded onto interviewer laptops and interview responses were, for the most, entered directly onto the laptop computers. Several interviewers used a paper version of the protocol, took notes by hand and then entered interviews onto laptop computers. Interviewers saved each interview as a separate electronic file on his or her laptop and transferred all files to NCIPH following the deployment.

On-line Survey Data Analysis

NCIPH conducted descriptive analyses of the on-line survey data and summarized the job background data on respondents and the percent of respondents who had experience with the various Target Capability measures. For the specific performance measures within a Target Capability, NCIPH summarized responses and examined respondent feedback as to why a performance measure was not achieved.

Key Responder Interview Data Cataloguing and Analysis

NCIPH created an Access database to log all interviews. Fields included interviewee name, interviewer name, job background and Katrina duty stations and functions, and Target Capabilities that the interviewee addressed. NCIPH reviewed all interviews for completeness.

Interviews were sorted into the following key responder categories: EMS (n = 16); Federal (n = 5); Medical (n = 7); Local (n = 5); State (n = 56); and State Other (n = 4) background data and requested clarification from MDH. Interview responses to Target Capability questions were analyzed with separate analysis for each responder category. NCIPH staff identified themes for each responder category to create Target Capability improvement recommendations. Cross responder category analysis was then conducted to ascertain the overlap and differences in opinion on Target Capability improvement recommendations. Summary analysis of all key responder categories was then conducted to create summary Target Capability improvement recommendations.

III. RESULTS

On-line Survey

Three hundred fifty nine individuals responded to the survey. Below is a brief summary of the respondent job characteristics at daily place of work and job characteristics and responsibilities during Hurricane Katrina response. Tables presenting all respondent data can be found in Appendix C: On-line Survey Results.

Respondents reported working a variety of job category roles in their daily job, with nurse being the job category role with the highest percent of respondents (22%), 13% reported the clerical/administration and environmental/occupational safety job category role, and 11%

reported that physician was the job category role for their daily job. Fifty percent of respondents reported that they had worked in their position for 6 or more years, an additional 20% reported that they had worked in their position for 3-5 years.

Regarding daily job place of work, nearly 45% of respondents reported that they worked for the state health department, 24% reported work for the district health department, 11% work for a hospital or clinic, and 5% work for an EMS service.

Respondents reported working in a variety of locations during Hurricane Katrina response. About 22% of respondents worked in a Special Needs Shelter, 11% worked in a county health department, 9% reported worked at the State Public Health Emergency Operations Center, 7% worked at the Public Health Forward Command Center, 6% worked at a district health department, and 5% each worked at the Emergency Management State Emergency Operations Center and a Local Emergency Operations Center. Approximately 24% of respondents worked in "other" unspecified places of work during Katrina response.

In terms of job function during Hurricane Katrina response and recovery operations, 15% reported support/clerical/various job duties job functions, 9% provided environmental services, 8.6% provided clinic operations/immunizations, 8% worked as shelter management, 4.5% each performed field response unit and evacuation management/medical transportation/EMS job functions. Nearly 28% of respondents performed "other" unspecified job functions during Katrina response and recovery.

Forty-six percent of respondents chose field employee/staff section/strike team member as their assigned position level during Hurricane Katrina response was, 29% chose office administration/support staff/non-management/no field response, 13% chose middle management/branch chiefs/strike team leader, and 11% chose upper management/command staff.

Respondents reported that they had a range of experience for their assigned job function during Katrina response. Twenty-seven percent indicated that they had a maximum level of experience, 31% indicated that they had a moderate to high level of experience, 25% reported that they had low level of experience, and 17% indicated that they had a minimal level of experience for their assigned job function.

Respondents also reported a range of preparation for assigned tasks during Katrina response. Twenty-four percent reported a maximum level of experience, 40% reported a moderate to high level of preparation, 27% reported a low level of preparation and 9% reported minimum level of preparation for assigned tasks.

Table 1 presents the number of on-line survey respondents that provided feedback on each Target Capability. The largest number of respondents, 106, provided feedback on Target Capability 1.1.0 Planning, 104 provided feedback on 4.20.0 Mass Care and 93 provided feedback on 4.1.0 On-site Management. Within each Target Capability, a varying number of respondents answered specific Performance Measurement items.

Table 1: Number of On-line Survey Respondents that Provided Feedback on Target Capability

TARGET CAPABILITY	NUMBER OF RESPONDENTS
1.1.0 Planning	106
1.2.0 Interoperable Communications (Communications and Information Management)	70
2.1.0 Information Sharing and Collaboration, Public Information	77
3.3.0 Food and Agriculture Safety and Defense	43
3.4.0 Public Health Epidemiological Investigation and Laboratory Testing	30
3.5.0 Citizen Preparedness and Participation	41
4.1.0 On-Site Incident Management, Emergency Operations	93
4.2.0 Emergency Operations Center Management	65
4.3.0 Critical Resource Logistics and Distribution	55
4.4.0 Volunteer Management and Donations	28
4.5.0 Worker Health and Safety	36
4.7.0 Animal Health Emergency Support	3
4.8.0 Environmental Health and Vector Control	47
4.12.0 Citizen Protection: Evacuation and/or In-Place Protection	30
4.16.0 Triage and Pre-hospital Treatment	53
4.17.0 Medical Surge	63
4.18.0 Medical Supplies Management and Distribution	61
4.19.0 Mass Prophylaxis	63
4.20.0 Mass Care (Sheltering, Feeding, and Related Services)	104
4.21.0 Fatality Management (Manage Fatalities)	13

Key Responder Interviews

A total of 93 interviews were conducted and catalogued. Tables on participant job profile, Hurricane Katrina work location and function, and direct experience with Target Capabilities are presented in Appendix D: Responder Survey Instrument.

For job function, respondents were classified as public health or medical responders. Among the 57 public health responders, 12 reported nurse as job function, 9 reported management/policy analysis, and 5 each reported environmental health and medical director/physician. Three health directors participated in the interview. Among the 39 medical responders, 16 were EMT/paramedics, 5 were physicians, 3 each were nurse and emergency management, and 2 each were pharmacy and administration. Three interview participants had public health and medical responder job functions.

Thirty-one percent of interview participants had 6 or more years of experience in their current job function, 34% had 3-5 years experience, 20 percent had 1-2 years experience and 15% had less than one year of experience in their current job function. Thirty-eight percent of interview

participants reported state health department as their daily place of work, 18% each reported district health department and emergency medical service as daily place of work.

Twenty-nine percent of interview participants reported the state health department as their place of work during Hurricane Katrina response, 13% reported county emergency operations center, 12% reported EMS—AMR, 9% reported local hospital, and 7% district health department as place of work. The remaining interview participants reported working at state forward command, DMORT, EMS—Arcadia, and multiple work locations.

Twenty-six percent of interview participants reported field operations as their function during Hurricane Katrina response, 22% reported operations, 12% each reported logistics and command as their function during Hurricane Katrina response.

Table 2 presents the number of interview respondents that provided feedback on select Target Capabilities. The greatest number of respondents, 48, provided feedback to Target Capability 1.1.0, 41 provided feedback on 1.2.0 Interoperable Communications, and 39 provided feedback to each 4.1.0 On-site Incident Management, and 4.2.0 Emergency Operations Center Management. The remaining Target Capabilities had feedback that ranged from 2 individuals for 4.7.0 Animal Support to 33 individuals for 4.23.0 Mass Care.

Table 2: Number of Interview Respondents that Provided Feedback on Target Capability

TARGET CAPABILITY	NUMBER OF RESPONDENTS
1.1.0 Planning	48
1.2.0 Interoperable Communications (Communications and Information Management)	41
2.1.0 Information Sharing and Collaboration, Public Information	27
3.2.0 Critical Infrastructure Protection	17
3.3.0 Food and Agriculture Safety and Defense	15
3.4.0 Public Health Epidemiological Investigation and Laboratory Testing	32
3.5.0 Citizen Preparedness and Participation	17
4.1.0 On-Site Incident Management, Emergency Operations	39
4.2.0 Emergency Operations Center Management	39
4.3.0 Critical Resource Logistics and Distribution	30
4.4.0 Volunteer Management and Donations	31
4.5.0 Worker Health and Safety	22
4.7.0 Animal Health Emergency Support	2
4.8.0 Environmental Health and Vector Control	14
4.12.0 Citizen Protection: Evacuation and/or In-Place Protection	15
4.16.0 Triage and Pre-hospital Care	22
4.17.0 Medical Surge	21
4.18.0 Medical Supplies Management and Distribution	27
4.22.0 Receipt and Management of Strategic National Stockpile (SNS) and Vendor Managed Inventory (VMI)	18

IV. TARGET CAPABILITIES

This section will provide results from the on-line survey, key responder interviews and community assessment by Target Capability.

1.1.0 Planning

Online Survey: No. responses = 106

Performance Measures	% Yes
All Hazards plans successfully implemented	55.66
Risk analysis implemented	52.83
Mutual Aid Agreements executed	53.77
Personnel familiar with available MAA and MOUs	48.11

Issues

- Inadequate NIMS training or use of NIMS
- Plans not adequate to meet disaster of this magnitude
- Risk management for ESF 8 lacking
- Mutual Aid Agreements not implemented as planned

Key Responder Interviews

Responder Type	Worked Well	Needs Improvement
Medical	HEICS was useful for incident management All aspects of plan worked well; adequate supplies stockpiled Moved team to hospital before storm struck and thus had adequate staff.	Internal communication; satellite telephone antenna should be relocated and get spares. Need financial assurance that will be paid for work. Shelter plan for discharged ED patients. Improve hurricane tracking/forecasting ability. Improve coordination between ESF functions
State Other	EMAC system	Need to link before the storm; determine what's feasible for them before storm Delegate; let experienced people help.
Local	Movements of patients in advance of storm. Mutual aid agreements (MOU/MOA)	Getting local physicians to help at County medical facilities. Sheltering operations Mass care Logistical warehousing EOC infrastructure.
State	Were able to communicate information back to central office through district EOCs	When plans are updated, all responders should be informed. Need improved portable and fixed

	Phase-specific and in-depth plans were most effective. Presetting location and staffing of special needs shelters. Previous ICS and BT training aided response. Mutual aid agreements. Personal relationships with local emergency management personnel.	communication systems. Did not consider staff needs relative to an extended response or for an extended response at all when planning – need to work on long-term planning – consider training more people in more responsibilities so can rotate and thus maintain long-term response. Sheltering should be coordinated with local officials and involve input of other state agencies. Planning did not consider the will of the people and the possibility that they would not comply. Command structure was fractious. Coordination through state central command cumbersome and inefficient.
EMS	Ability to call upon resources from outside affected areas/private entities was helpful. Early training was key in the successful implementation of preparedness plans. Facilities that had plans used them; benefited from guidelines provided by plans.	MOAs with the full scope of vendors. *Planning for the worst-case scenarios rather than what the past season have brought. Communication ability should be given more weight in developing plans. Better anticipate needs and pre-stage supplies and equipment; full scope ("wrap around") planning needed. Plans should be able to be revised based on updated storm information.
Federal	Physicians well-integrated into USAR	More disaster training. Better State capabilities, along with a more unified, centralized state structure. If the State is going to contract out emergency plan creation, need to engage in more oversight.

1.2.0 Interoperable Communications

On-line Survey: No. responses = 70

Performance Measures	% Yes
Sufficient back up equipment and power sources available	51.43
Responders able to communicate with counterparts in other jurisdictions	47.14
Responders able to communicate across regional, State, and Federal agencies	44.29
Redundant communications equipment available and activated	51.43
Common language and coordinated communication protocols implemented	45.71

Issues

- Communication systems failures, including back up systems, redundant systems not available at first
- Magnitude of disaster greater than communications plans
- Satellite and radio system and equipment inadequate
- Existing, available systems were different and not compatible
- Lack of common language between military and non-military, and hospital and non-hospital personnel

Key Responder Interviews

Responder Type	Worked Well	Needs Improvement
Medical	Radios within hospital, Southern Link, and HAM radio were useful for maintaining communications.	Need backup and alternate communication ability, esp. for key staff. Acquire HAM radio in house and training on the satellite phone. Create an information clearinghouse.
State Other	Satellite communication	Agencies responding from out-of-state should be met at their staging areas by reps of the agency that requested them and be handed off to appropriate local/county agency. Interagency communication should be interoperable. Mississippi needs alternative communications systems
Local	HAM radio Communication within the EOC 911 Radio system Repeaters.	Spare parts are needed and should be stored properly. Need MOA/MOU for communication equipment with an outside agency. Need mobile satellite system, along with stateside radio system.\

State	Could not communicate region to state "Nothing worked well for us"	Need to have back up plans; do not plan to have storm-vulnerable infrastructure available as the only plan (plans included relying on land lines, 911, and cell phones). Greater forethought need to be put into this, i.e. Cingular was chosen even though many counties do not have Cingular towers. Communication equipment should not be fixed in vehicles. Need "hardened" communication equipment with Internet access. Need VHF/UHF radios that can communicate with anyone.
EMS	Southern Link Some collaboration between county and (private) EMS seemed to maximize both entities assets. Were mostly able to maintain contact with EOC; responders able to communicate with other jurisdictions.	Statewide communication ability (i.e. satellite phones, HAM radio) and infrastructure (i.e. generators) should be further developed – there was no apparent backup plan Redesign communication system to explore alternative means of communication. Needed internal communication ability in shelters and across agencies. Hard wiring of systems needs to be integrated to allow interoperability.
Federal	Nextel worked for Feds	Understand limitations of satellite Mobile EOCs need communication ability.

2.1.0 Information Sharing and Collaboration

On-line Survey: No. of responses = 77

Performance Measures	% Yes
Hurricane threat information was disseminated to your health agency/facility/work place	92.21

Issues

- Information stations and TV, radio, print used to disseminate hurricane threat information
- Critical information needed for working with hurricane victims was available through central office communications, information not shared with shelter staff on coast
- No pre-hurricane specific threat info disseminated to agency or to hospitals through state agencies such as MDH, MEMA or HS. Public media such as TV and Radio were how hospitals knew about the impending threat. Healthcare staff had been widely educated in need to monitor weather and media through MS preparedness training.

Key Responder Interviews

Responder Type	Worked Well	Needs Improvement
Medical	General notification effective through ICS All forms of media effective, esp. hurricane line and joint statements at the County level.	Accurate info needs to be shared in appropriate intervals. Use HAM radios if needed later on. Share information on sheltering when giving hurricane information. Centralization of command.
State Other		Mississippi needs to do a better job and cede control to more experienced people: FL came prepared with press releases but was prohibited from distributing them.
Local	Twice daily press conferences Evacuation notices were put out in a timely manner. Information was passed to the community according to how important it was. Partnered well with local radio station.	Create a joint information center. PIO needs to be a permanent staff function. Better coordination with local media agencies.
State	Pre-event communications, such as general information informing public on how to prepare Radio was an important source of	People on the ground need autonomy to speak to the press – information sharing is too centralized and not informative; decentralize from Office

	information throughout. Handing out of flyers by first responders. Incident command center useful for producing standardized information.	of Health Communications. Improve guidance from the central State authorities post-event. Need trained PIO with any event response.
EMS	Crews distributing into to public. County briefings. Good working relationships with local press and agencies.	Closer collaboration with local media. More frequent updates.

3.2.0 Critical Infrastructure Protection

On-line Survey—no questions

Key Responder Interviews

Responder Type	Worked Well	Needs Improvement
Medical	Preplanning was effective: high-risk areas were identified in advance. Disaster/contingency plan worked well-stationed appropriate support personnel	Increase diesel and water stockpiles. Change roof surface. Increase communication between medical staff and State. Elevate generator higher off the ground.
Local	"Don't Know"	"There needs to be a reevaluation of all critical infrastructures for the county based on new data."
State	Identified threats to infrastructure in timely manner. Flexibility. Forethought in locating water supply outside of 100-year floodplain.	Protective measures must be sustainable. Ensure that infrastructure is maintained and regularly inspected.
EMS	Pre-placement of crews for strategic emergency response. Planning was based on predicted safety.	Better modeling of flooding so can choose pre-staging areas more effectively. Need to have a plan in place to move resources away from danger earlier. Need dedicated locations for storage.

3.3.0 Food and Agriculture Safety and Defense

On-line Survey: No. of responses = 43

Performance Measures	% Yes
Humans with exposure to or ingestion of contaminated food products were readily identified?	25.58
Risk communication efforts effective in providing timely and accurate information to the public regarding safety and handling of contaminated food products	69.77

Issues

- No public information assets initially deployed forward.
- All public information was channeled through Jackson, Mississippi, and was slanted toward mass media, which the Coastal counties did not have for weeks.
- No clear order as to what was being done.

Key Responder Interviews

Responder Type	Worked Well	Needs Improvement
Local	Coordinating with local grocery stores to identify and distribute non-perishables. Interaction between field hospital and EOC regarding potential GI disease.	Control the provision of on-site prepared/preparation of food by various organizations so that proper sanitation can be monitored and maintained. Mechanism/system/plan to utilize available stock in all community commercial establishments, including warehouses, so that can be used for mass feeding. Need means to safely dispose of perishable, unused or spoiled foods
State	Disseminated information concerning food safety and sanitation to the public effectively. Had fast response because personnel were prepared to investigate food and water supply issues as had experience and checklist in place, along with already defined minimum standards. Surveillance program for restaurants. Volunteer food providers/facilities abided by food safety standards.	Better manage volunteer food providers and food donations; should be able to control and document food resources, especially movements and locations. Listen to locals. Shelters need to be informed on what to serve, what not to, and how to serve what they do. Need more order and organization to the certification of food establishments that reopened. Pre-position to accelerate arrival time.

3.4.0 Public Health Epidemiological Investigation and Laboratory

On-line Survey: No. of responses = 30

Performance Measures	% Yes
Reportable diseases or syndromes successfully recognized, diagnosed, and properly reported.	70
Suspicious symptoms reported to medical personnel	70
Outbreak cases, if any adequately documented and reported in a timely fashion.	63
Alerts were generated in a timely fashion.	56.67
Laboratory specimens collected, handled, and analyzed correctly including maintaining a chain of evidence	56.67

Issue

- What should be considered an outbreak or cluster?

Key Responder Interviews

Responder Type	Worked Well	Needs Improvement
Medical	Cooperation between DMAT, ED, and Inf. Control. Facilities did their own thinking and planning for their own patient types**.**	Surveillance planning PH, hospital, and DMAT coordination. Better dissemination of relevant information into the community.
State Other	FL and MS worked well together.	
State	CDC assistance Real time reporting Following lab protocols Training shelter residents in hygiene. Engaging all facilities to provide information. Labs were deployed and operational in timely manner.	More focus: "pre-identified facilities that will collect pre-identified data, with methods for getting data to a centralized location" Need a standardized reporting form, lab submission protocols, and ability to photograph and submit rashes and similar conditions. Keep experts readily available. Need a plan to be able to follow up at the local level for specific disease reports. Support resources need to be provided. Process for certifying mobile and resource labs.

3.5.0 Citizen Preparedness

On-line Survey: No of responses = 41

Performance Measures	% Yes
Public information on personal preparedness and emergency plans distributed using multiple channels and venues.	80.49
Information on personal preparedness and emergency plans for special needs or non-English speaking populations distributed using multiple channels and venues.	53.10
Public information tailored to address special needs populations and cultural differences.	60.98

Issue

- Communication limited to press releases and flyers

Key Responder Interviews

Responder Type	Worked Well	Needs Improvement
Medical	Information provided pre-storm: evacuation and hurricane safety. Insights of EMS and police	Coordinate special needs. Central clearinghouse for information dissemination. Redundant public communication.
Local	Post-storm had non-English communications. Communicated mandatory evacuations/evacuation requirement effectively to the community.	Non-English pre-storm information dissemination. Provide the public with information on special needs shelters. Improve cooperation with local TV and cable provider.
State	Press releases worked well for evacuation. Press releases produced in 3 languages (2 other than English).	Prepare press and radio releases ahead of time. Inform public of shelter locations sooner. Find a way to get information to non-official shelters.
EMS	Information provided closer to when the storm hit was more effective. Location of special needs center was good – did not flood.	This experience will ensure that the public will take the warnings more seriously. Need mass evacuation plans.
Federal		Need contingency transportation plans for those who could not afford to leave.

4.1.0 On-site Incident Management

On-line Survey: No. of responses = 93

Performance Measures	% Yes
Aware of the IAP	80.65
Incident Action Plan was established.	82.8
All response activities coordinated through incident commander	77.42
There were Standard Operating Procedures for establishing and Area Command	61.29
Need for Area Command was identified	77.42

Issues

- Respondents not aware of Incident Action Plan
- MDH set up separate incident management, which appeared to bypass local EOC
- Breakdown in communication, lines of authority, especially between Central Command and forward command
- Lack of clear command structure
- SOPs for special needs shelters not identified

Key Responder Interviews

Responder Type	Worked Well	Needs Improvement
Medical	DMAT Triage performed outside Interaction of DMAT and hospital management.	
State Other	Prepared structure worked well.	Define teams and roles based on experience and before deployment. Consistent staffing assignment to promote stability. More training in types of emergency organization some local personnel assets belonging to ESF 8 were reported as "not have a clue" on how to use ICS & NIMS systems".
Local	Training and exercises helpful for IC team. Able to maintain high functioning despite protracted operation. Good local and intra-County coordination.	Additional training for EOC staff. Coordinate between County and State EOC for work tasks. Integrate additional stakeholder agencies – law enforcement, volunteer, Feds – into EOC operations and EOC operation planning.
State	ICS structure; working through IC on	Better information dissemination from

	the ground. Support from entire agency (MDH) IAP and daily communication from command staff; command center for public health had a liaison from EOC. Knowing agency's role. Volunteers that had followed procedures and helped out were helpful.	the top down. More timely communication from field staff to command center. Coordinate all activities through local EOCs. Allow ERC to do onside incident response but do not stretch too thin. Train outside staff.
EMS	Clear command structure, quickly established. Paring with public safety and other entities such as hospital to set up necessary operations (Dispatch center) Pre-deployment of personnel. Access to national (private) resources.	Continual training and mock exercise with emphasis on mastering the NIMS but those in charge of shelters need formal training for that role. Avoid using EMS for task tracking. Need adequate personnel and rotation of all of them to prevent fatigue and burnout. Need the ability to train, manage, and utilize mobile assets.
Federal		"Commanders went to scene instead of command"

4.2.0 Emergency Operations Center Management

On-line Survey: No. of responses = 65

Performance Measures	% Yes
Jurisdiction activated EOC	89.23
There was adequate time to staff EOC	89.23
Jurisdiction implemented mutual aid	72.31
Jurisdiction produced an IAP	76.92
Jurisdiction set a realistic schedule for Incident Planning Activities	64.62
Agency produced and IAP in an adequate amount of time	72.31
Jurisdiction produced a Situation Report	86.15
Jurisdiction set a realistic schedule for Situation Reporting activities	75.38
Situation Reports produced at appropriate intervals	81.54
Jurisdiction requested State and Federal resources.	90.77
Personnel within EOC had adequate and appropriate training for an incident of this size	36.92
EOC had the ability to expand operations	70.77

Issues

- MDH staff and volunteers not familiar with EOC position terminology, especially interdependent positions
- Lack of familiarity with NIMS, ICS, Unified command operational protocols
- Lack of familiarity with EMAC
- Appropriate training available prior to Katrina and some personnel did not think it was necessary to participate in training

Key Responder Interviews

Responder Type	Worked Well	Needs Improvement
Medical	The County Coordination of activities. EOC effective until communication collapse.	Involve hospital and medical staff officers in EOC planning and utilization; involve MDs early in process. Improve feedback to requestors on status of requested assets – and give what is requested, not what someone thinks they should need. Centralize requesting, feedback, etc. process
State Other		Need "cultural shift"— away from passivity. Didn't act unless told and failed to plan for obvious contingencies such as other states leaving unless someone told them.
Local	ICS principles and procedures	Improve facilities – not enough room; need

	were effective for controlling the operation. Briefing schedule.	to be able to expand. Improve communication assets and capacity. Need more staff and more flexibility in staffing.
State	Trained personnel. Centralized location; having all entities under one command structure. Communication and information dissemination with EOC was good. Everyone got along.	ICS was often circumvented – should not be allowed. "Personnel within the EOC did not have adequate and appropriate training for the incident." Timing and scope of preparations were inadequate, very superficial; did not properly anticipate needed space, setup of IT, communications, etc. was done last minute, no thought given to wrap-around. Need to be able to communicate with outside world. Forward command not always able to meet obligations/perform duties. Higher ranked individuals and/or those with greater responsibilities did not have more advanced training, greater ability, nor an obvious reason for why they held those positions. Less bucking of control hierarchy. Need very basic training for nearly everyone (i.e. how to work a satellite phone); every person/role should have at least 2 trained backups.
EMS	Having all governments represented; FL group. Knowing role.	More staff. Better location (outside of flood area) and ability to house staff. Feedback between MEMA and local EOC director.
Federal		Need asset-tracking system. Unified command broke down. Deployed teams should be made more self-sufficient.

4.3.0 Resource Logistics and Distribution

On-line Survey: No. of responses = 55

Performance Measures	% Yes
Resource and logistics plans were followed	50.91
Resource requests were met	56.36
Resource requests were accurately completed	58.18
Time between requests for resources and delivery of resources was appropriate	49.09
Delivered requests of supplies and materials exceeded warehouse capacity	40
Refueling and maintenance services were effectively provided	45.45
Stockpiled resources met response requirements	58.18
Contracted resources met response requirements	50.91
Supplies provided to command staff were adequate to sustain an operation of this size	69.09

Issues

- Logistics overwhelmed and did not follow Branch/Unit plan
- Took time to figure out situation and where resources were
- Resource requests to MEMA and FEMA took considerable time and multiple requests
- Resources arrived days after they were needed
- Communication about when resources would arrive were inaccurate
- Resource requests not accurately completed
- MS has no procurement request tracking program
- Purchasing training for state personnel inadequate
- No resource distribution system
- Fuel was a huge problem, wasted time and resources to locate fuel, no clear policy on obtaining fuel, plans to provide first responders with priority access to fuel not enacted
- Lack of coordination between EOC, MEMA, and FEMA
- Stockpiled supplies not what was needed, what was needed was food and fuel, items not stockpiled to meet a hurricane
- Need to contract for fuel, food, water, shelter resources
- Contractors not responsive to needs or not immediately available after hurricane
- Available supplies to EOC and forward command uneven, perception that EOC well taken care of, while forward command "had to do whatever we could to get by."

Key Responder Interviews

Responder Type	Worked Well	Needs Improvement
Medical	Florida's system	Special considerations for health care workers. Prefer to use private sector to acquire needed supplies and resources. Improve coordination of agencies and assets through an in-state tracking system. Listen to people on the ground regarding needs.

Local		Coordination between state and locals needs improvement. Resource requests should be filled; among requests that were filled, there were problems getting it to the proper County. Need stockpiles based in counties.
State	Resourcefulness of staff. Request process worked well. Patient care equipment caches were available throughout the state and were accessed.	Need coordination of donations based on needs and preplans. Reliable communication. Standardized tracking form that could enable online tracking. Storage space should be tracked like any other resource. Emergency management was not capable of handling response: finance people were unable to react appropriately due to lack of experience with emergency finance and training on the same → increase training of management to be able to handle it.
EMS	Having a person in place from whom to request resources; able to get things moving once able to talk to a person. Plans followed as in place. National entity was helpful.	Streamline approval process; either enable staff who are present to approve requests or put staff allowed to make these decision in EOCs. Need tracking/ability to check one's order status; need post-event communication ability. Disseminate information on how to access full scope of assistance/resources. Pre-plan centralized staging and pre-staging.

4.4.0 Volunteer Management and Donations

On-line Survey: No. of responses = 28

Performance Measures	% Yes
Volunteer management and donations plans were successfully implemented	46.43
There was adequate time to establish and fully staff donations coordination centers	32.14
There was adequate time to establish and fully staff distribution centers	39.29
Warehousing locations and facilities were established and staffed	57.14
Volunteer phone bank/reception center was established	35.71
Volunteer credentialing (specifically medical) was performed	39.29

Issues

- Need to have additional capacity to handle huge numbers of volunteers
- There were creative arrangements (ie school of pharmacy to sort and fill orders) that got job done
- Limited advance database of qualified volunteers
- No warehouse established for volunteer donations, no centralized capacity
- Lack of coordination to receive donations and distribute
- Private charities much more efficient at setting up and managing donation sites
- No volunteer phone bank or reception center established
- Medical credentialing inconsistently performed

Key Responder Interviews

Responder Type	Worked Well	Needs Improvement
Medical	Faith –based charities, People got what they needed eventually.	Credential volunteers BEFORE allowing them into the Hurricane zone and require shelter-training certification. Need a check in point for volunteers and a center for donations along with security and a system to determine the allocation of donations and manpower. Need better security.
State Other		Build database of all clinical volunteers Coordinate with home states for out-of-state volunteer credentialing. Establish protocol for onsite credentialing.
Local	Volunteer check-in and credentialing worked well at first.	Need volunteer coordinator as permanent IC position. Need multiple staging/warehousing areas. Find a way to make a volunteer system that cannot be easily bypassed when swamped.

State	Online registration of medical providers worked well until it got backed up. State departments of licensure handled credentialing well. Pharmaceuticals Resilience of volunteers. Pre-staging of fuel trucks in secret locations.	Better receiving and turn around on donations, especially medications. Inform volunteers about protocol to volunteer and time they are most needed; block hotel rooms for the day of the storm for incoming responders. Need to publicize plan for handling volunteers and getting them to work quickly. Volunteer management/inventory highly decentralized and fairly fractious. Need access to HHS medical credentialing and RN and MD Board → need to be able to check-in, credential, and track health care volunteers. MDs just setting up should be checked to make sure they are credentialed and if they are not make sure they do not get medications. Need more immediate means to expel and prohibit non-credentialed health care providers from practicing.
EMS	Law enforcement was able to maintain security. The performance of the volunteers was high quality. The credentialing process worked (unless/until overwhelmed) and the EOC was effective coordinating most of the time.	Get State involved earlier, along with Law Enforcement, but regulation of facilities should be left up to local authorities. Pre-stage and create a clearinghouse. Plan beyond normally expected volumes of volunteers and donations.

4.5.0 Worker Health and Safety

On-line Survey: No. of responses = 36

Performance Measures	% Yes
Personnel wore the required PPE for site entry and work	75
Workers exposed to hazardous substances were quantified and recorded	47.22
Support services, including mental health, treated injured/ill personnel	72.22
Personnel were adequately decontaminated if indicated	63.89
First responders were served by support services	83.33
Agency had a method of accountability for personnel both pre and post disaster	80.56
Employees in the affected area had a method of reporting to work	63.89

No issues identified by respondents

Key Responder Interviews

Responder Type	Worked Well	Needs Improvement
Medical	Vaccination of all involved workers EAP Following safety plans.	Make mental health for first responders a priority. Improve reporting. Designate fuel for hospital employees
State Other	FL kept 2 EMS groups with them at all times to ensure safety.	
Local		First responders need appropriate PPE for this specific type of event, as different types are needed for different event, rather than a standard package being good for all.
State	Briefings Attentive supervisors People kept calm and stayed busy. Safety instructions given to all CISM team members.	Wrap-round planning for out-of-state AND local teams. Need to better plan for personnel needs. Emergency responders need to know how to access CISM services. "Rather be fair than right to set scheduling."
EMS	Supervision by Medical Officer in place. Ability of organizations to plan for and meet own needs. Keeping workers out of danger/away from harm based on no reported injuries to workers.	"Just following the plan for disasters" Ensuring communication ability. Better anticipating less obvious needs not directly related to injury or harm, such as a quiet place for night shift workers to sleep.

Federal	No major injuries.	

4.7.0 Animal Health Emergency Support

On-line Survey
5 Performance Measures, only 3 respondents to this category, not enough responses to analyze data.

Key Responder Interviews

Responder Type	Worked Well	Needs Improvement
Local	"Nothing worked well at all . . ."	Need to include animal health, clean up, veterinary emergencies into planning, especially for animal emergencies. Plan for this! Ideally pre-designate or simply designate later a safe area for evacuees to place animals or for shelter personnel to place animals.
Federal	VMAT was good.	

4.8.0 Environmental health and Vector Control

On-line Survey: No. of responses = 47

Performance Measures	% Yes
Environmental health risk management messages were effectively communicated to the public	74.47
Vector control plans were successfully implemented	63.83
Environmental health testing and monitoring was provided	80.85

Issue

- No communications from MDH EOC regarding environmental health risk management messages or stationing PIO assets or personnel forward

Key Responder Interviews

Responder Type	Worked Well	Needs Improvement
Medical	Cooperation and coordination between and among external agencies.	Facilities need better food storage scheme. Educate the public pre-storm using PSAs and other means on how to take preventive measures.
State	Disseminating information to the public regarding environmental/vector concerns. Procurement of resources from retailers. Had a plan in place for rapid restaurant inspection. Pumping pools. The support of CDC and FL.	Staffing vector control needs to be done immediately like any other program. Staffing of outside assets should be staged and better planned for arrival; pre-position information and resources for dissemination, though they should be reviewed first Include this need as a volunteer support function in ESF. Better communication to the public. Need a potable lab for on-site water quality inspections.
EMS	Mass vaccination using improvised methods.	Ability to improvise when the situation warrants.
Federal		Timelier/more effective response to gas leaks by the EPA.

4.12.0 Citizen Protection Evacuation

On-line Survey: No. of responses = 30

Performance Measures	% Yes
There was adequate time to evacuate the affected general population	80
There was adequate time to evacuate special needs populations	53.33
Traffic and transportation plans were implemented	56.67
Affected general population was successfully evacuated	50
Special needs populations were successfully evacuated	46.67
Homeless populations were identified	10
Coordination with surrounding jurisdictions was implemented to ensure adequate locations and facilities for receiving evacuees	56.67
Public was accurately notified of shelter-in-place strategy	53.33
There was adequate time to notify affected population of shelter-in-place strategies	53.33

Issues

- Special needs populations, including elderly, wait until the last minute to evacuate
- MS fell short in preparation for taking care of Special Needs Population in an emergency
- More than 25,000 special needs patients on the coast
- Contra flow traffic on Interstates from New Orleans impeded MS evacuation
- No military aircraft available to move special needs populations pre-landfall
- Mutual aid ambulances sent on 8/27 and withdrawn on 8/28
- Failure to mandate evaluation by local officials and failure to inform public of incident severity hindered evacuation success
- It should never have been mentioned that the storm dropped down to a level 3 storm.
- Overload of patients at special needs shelters
- Tried for many days to identify special needs shelters in host locations
- Hospital took care of around 50-60 special needs patients, we have always done this, Public Health should step up to the plate

Key Responder Interviews

Responder Type	Worked Well	Needs Improvement
Medical	EMS was very helpful with evacuations and decompression Able to shelter and feed employees and discharged ED patients even though had not planned on it.	Once it is determined which facilities will be use, need to supply them better. Need central coordination of patient movement. Improve public-private coordination/cooperation.
State Other		Need to have special needs shelters in place and identified well-before storm – all should be able to withstand

		category 4. Need better maps and identification of places of refuge
Local	Zoned disaster plan. Evacuations were effective and timely.	Need mass care coordinator position. Red Cross ineffective. ESF 6 should be revamped.
State		People to run shelters. Structures and people outside the area to establish and run shelters. Relocate adequately from affected areas.
EMS	Health Department-coordinated evacuations of stretcher patients. Evacuations from privately owned facilities went smoothly.	Need more special needs shelters. Need ability to track bed count; coordinate resources through Emergency Management. set up shelters earlier and begin evacuation sooner. "ARC refused to staff identified and full shelter;" do not rely on Red Cross – work with local officials instead.

4.16.0 Triage and Pre Hospital Treatment

On-line Survey: No. of responses = 53

Performance Measures	**% Yes**
Triage and pre-hospital treatment plans were successfully implemented	81.13
Triage and pre-hospital patients were successfully tracked	45.28
PPE equipment was available to first responders and medical response personnel	71.7
The ability to track where patients were transported was available	49.06
Did any patients require decontamination	13.21
Patients were appropriately triaged	83.02
Triage patients required re-triaging	35.85
Triaging was completed in an adequate amount of time	73.56
Patient stabilization was completed in an adequate amount of time	75.47
Mutual aid and interfaculty ambulances were utilized as needed	66.04
Communications interoperability existed for all responders	32.08
Evacuation and patient re-location was implemented using ambulances	67.92
Evacuation or relocation of patients was effective	54.72

Issues

- Local triage worked well but state and federal agencies did not coordinate efforts with local EMS

- Shelters had difficulty getting responses from ambulance services
- Sheer volume of patients overwhelmed ESF 8 staff
- Lack of record keeping in shelters
- Hospitals lost all electronic and paper record keeping capacity
- Patients moved by busload to other states without tracking
- Mutual aid ambulances asked for but state stashed a large amount of them for several days
- Lack of fuel to move patients
- Mutual aid responders not able to communicate, due to lack of equipment and loss of communications infrastructure
- Patients moved in and out of shelters and bused with little communication or coordination

Key Responder Interviews

Responder Type	Worked Well	Needs Improvement
Medical	*DMAT Utilization of limited space High quality emergency care was provided.	*Coordination of medical care across all providers. Need to include all involved entities in planning process. Pre-establish collection points for decompression. Investigate ways to get parallel systems set up more quickly.
State Other	ESF-8 coordination Mostly excellent interface & coordination between counties.	AMR interfered with care in order to maintain market share. Emphasize that patient needs are more important than contractual arrangements. Non-government agencies should not be allowed to dictate response pattern.
EMS	Triage plans were implemented effectively and were able to handle and provide care to walk-up patients and triage all patients prior to transport. Mutual aid agreements for patient evacuation, incident response, and support all worked well. Waiving of certain regulations.	Guidelines for what to do when communication fails; mutual aid ambulances need to be able to communicate with local EMS. Need multi-state clearinghouse to identify hospitals with space and appropriate available level of care. Further train paramedics so that they are better able to perform the expanded roles they were given. Pre-plan what rules would be waived under which circumstances; try to reduce bureaucracy. AMR would not help.

Federal		Alternate (physical) routes to complete EMS calls should be explored – or should at least have the capability to investigate this

4.17.0 Medical Surge

On-line Survey: No. of responses = 63

Performance Measures	% Yes
Personnel demonstrated competencies defined by their given healthcare professions to address diagnosis, treatment, and reporting	90.48
The number of available personnel was adequate to augment medical treatment facilities	60.32
Available number of beds was adequate for various casualty categories	46.03
The number of alternate care center centers established was adequate	39.68
The amount of supplies, pharmaceuticals, and equipment was adequate to effectively support a facility's reported surge capacity	55.56
Patients were successfully tracked	44.44
PPE was available to staff for the surge of patients encountered	61.9
The number of functional hospitals available was adequate to support the incident	36.51
Medical facilities had a plan for evacuation or decompression	47.62
Evacuation or decompression plans were effective	31.75
The standard of care was able to be maintained for this event	69.84

Issues

- Initially inadequate staff to respond to need
- Hospital were full, not enough beds
- NDMS, DMAT great but quickly ran out of supplies
- Need more nurses, mental health staff
- More special needs patients than anticipated, needed more shelters
- Surge of "Walking worried" in hospitals
- Requests for equipment, supplies not met
- Available medical facilities, (hospitals) impacted by storm, washed away, lost power
- Medical facilities lacking evacuation/disaster policies
- Field hospitals from other states did not coordinate well with local authorities
- Lack of food, supplies, water, staff decreased standard of care in the first days

Key Responder Interviews

Responder Type	Worked Well	Needs Improvement
Medical	Decompression plans. DMAT, volunteers, and armed protection from Law Enforcements allowed the hospital to provide care without difficulty.	Needed more staff to provide care, but mainly to relieve staff. Should consider establishing MOUs with facilities farther north so that decompression of patients will involve getting them out of harm's way. Better coordination of information, donations, and stockpiling of resources/supplies – scope less of a

		problem than length of period.
Local	Decompression. When local hospital became unusable, within 6 days there was a highly effective response by military EMEDD, DMAT and NC field hospital.	Use local physicians whose facilities were destroyed rather than import help.
State	Creating medical records on the fly. Private/public partnering. Integration of different types of care.	Pre-stage instruments. Need way to rapidly assess radiology equipment to ensure that are safe for use. Some way to access medical charts.
EMS	Credentialing of medical personnel. Tracking of patients. Adequate basic supplies and PPE. Early communication and consequent coordination.	Better monitor location and availability of volunteer medical staff. Lead EMS agency needs to take charge and coordinate utilization of all resources. Pre-designate hospital transfer location; coordinate evacuations/transfer with destinations better. No surge actually occurred because of failure of communication and difficulty of getting around in the community.
Federal		State should develop SMAT

4.18.0 Provide Medical Care

On-line Survey: No. of responses = 61

Performance Measures	% Yes
The time from assessment of shortfalls to requests for SNS supplies was minimized	59.02
The time from request to arrival of needed supplies was minimal	63.93
Special needs populations requirements were successfully met	47.54
Provided security met the needs of the situation	57.38
State or regional assets were adequately relocated to support incidents	49.18

Issues

- SNS requested late and slow to arrive, unclear when it would arrive
- Challenges with security of SNS supplies, dispensing SNS supplies
- Unanswered requests from MEMA and MDH
- SNS supplies did not match requested medical supplies (need to have bandages, masks with filters, body bags, oxygen bottles)
- Needed cleaning supplies (commodes)
- Inadequate number of and supplies available at special needs shelters
- Red Cross mixed special needs patients with general population
- Deficit in provision of home oxygen bottles, no plan to support this service in an emergency, hospitals do not have capability to refill bottles, nor bottles to replace
- Lack of basic supplies, cots, blankets
- Respiratory services was needed but not provided
- Patients shipped out of center without paperwork or known authority to move patients, transportation of patients not monitored.
- Not enough security, had to make special arrangements
- Department of public safety refused to provide security to ESF 8 command
- Confusion about who was in charge that led to situations that could have been avoided
- SWAT team had to be called in to restore order at a special needs shelter
- MEMA failed to place assets where they were needed
- MDH placed 40 ambulances at Stennis but unknown circumstances did not allow them to respond to local EMS system to handle transports

Key Responder Interviews

Responder Type	Worked Well	Needs Improvement
Medical	Private vendors were most reliable. Law enforcement was helpful in that took hospital staff around area to raid local pharmacies for medications. Medication was provided to those in need. Were able to maintain the integrity of	Improve coordination of resource and distribution efforts; some supplies were not what was needed and were therefore wasted efforts and wasted fuel. Should give medical supply stockpiles as caretakers for the community and

	their medications by moving them before the storm hit.	give a stockpile of fuel for essential hospital staff. Consider providing free meds to pharmacies to distribute in order to keep people out of the ED.
State Other		Need inventory system and organized process for collection/pick-up and delivery/distribution. Clothes, food, and fuel should be managed apart from medical supplies.
Local	Centralized request and distribution of vaccines; vaccines arrived quickly and could be ordered easily. Local planning and implementation of supply management was good for following normal chains of command.	Need to increase quantities of vaccine available. Pre-plan with vaccine vendors. A share of the SNS should be allocated for local use.
State	Preplanning of the location, contracts, and anticipated needs helped greatly. Local communication with EOC.	Need to be able to inform local EOC that supplies have been shipped and provided an estimated time of arrival (ETA), particularly for SNS materials
EMS	Use of national private resources and networks, especially *retail pharmacies*. Once established, a central inventory was helpful.	Define the SNS inventory and make this information available for planning purposes. Improve tracking capability and create a central inventory system. Send supplies out as soon as they become available, rather than wait on the entire order to be filled, when in crisis. Pre-plan with suppliers.
Federal	USAR docs managed to get supplies	Improve fuel resources – STOCKPILE!

4.19.0 Mass Prophylaxis

On-line Survey: No. of responses = 63

Performance Measures	% Yes
Mass prophylaxis and vaccination plans were successfully implemented	76.19
Accurate and timely public information was made available through multiple channels and venues regarding the location of these sites	52.38
Sufficient competent personnel were available to staff dispensing centers and vaccination sites	74.60
Separate prophylaxis-dispensing site was designated for responders and their families	44.44

Issues

- A lot of tetanus vaccination sent to the coast but could not be tracked and shortage problems were reported
- MDH would not communicate available meds
- Public information concentrated on mass media, when newspapers, TV, and radio were not operating, flyers were eventually produced
- Media that did work created rumors and problems, e.g. sending people to hospitals to get tetanus shots if they had been exposed to flood waters
- Hard to get the word out as to where vaccine would be available, tried to go to the people (food lines, Wal-Mart)
- Too many non-public health assignments to respond to vaccination needs
- No separate site for prophylaxis designated for responders and their families

Key Responder Interview

Responder Type	Worked Well	Needs Improvement
Medical	Got there, though slow and proper notification never given.	Pediatric supplies should be included instead of what someone thinks the facility needs. Essential to have information about estimated arrival and disposition of the order.
State Other	Experience of the Florida group.	Internal DMAT issues.
State	Coordinating security with State and Federal entities. Off-loading, repackaging, and distribution. Inventory tracking. Previous practice paid off → actual execution would not have been successful without	Make event oriented distribution of medications for those that need them. Local EOC need ETA and arrival information for SNS. Have enough trained staff – train as many people on SNS and its distribution as possible. Make sure deliveries go the right place and

	preplanning receipt and distributions sites, along with planning distribution.	are kept by recipient – not set sup to accept returns. Make sure medications are not expired. Maintain site confidentiality.
EMS	Waivers to reduce red tap, such as not requiring DEA number. Eventually received enough medications. *Suppliers	Tracking: what is coming and when. Training in proper ordering procedures. Better (more convenient) location of stockpile. Feds sent supplies to wrong location, repeatedly.
Federal		Need security for SNS

4.20.0 Mass Care (Special Needs)

On-line Survey: No. of responses = 104

Performance Measures	% Yes
All shelter residents transitioned back to original home facility, alternative accommodations prior to shelter closure	49.04
Public information regarding mass care was made available throughout the incident through multiple channels and venues	55.77
The special needs shelter plan was successfully implemented	62.5
Pet care/handling plan was implemented for sheltering of pets	25.96

Issues

- Patients, shelter residents had no homes to go back to
- Patients did not want to leave coast area
- Public information about shelter locations and directions to shelters was poor
- Communications within shelter management was poor, were not aware of other shelters
- Special needs shelter plans inadequate, hospital established special needs shelter in one of its buildings, existing shelters overloaded by patients and did not have enough supplies
- Inadequate training for staff working in special needs shelters
- Special needs shelter people did not bring needed dietary or medication supplies
- Special needs shelters had to be moved due to no inspection prior to operation
- Mixing of special needs shelter patients and general population
- Shelters had uneven number of patients and facility logistics, shelters north of the coast there was room available, shelters on the coast had unsanitary conditions
- No plan for sheltering pets
- Pets were brought into regular population and special needs shelters due to few shelters that allowed pets
- Evacuees brought pets into shelters even though they were not permitted
- Evacuees stayed in their cars with their pets at shelter locations

Key Responder Interviews

Responder Type	Worked Well	Needs Improvement
Medical	Hospital able to shelter 200 staff event though did not plan on it. Hospital was able to shelter discharged ED patients even though did not plan on it.	Better planning for a catastrophic event at the community level so that community can share burden rather than overwhelm hospitals; should include things such as preplanning evacuation sites and transportation out of town. Need to set up special needs shelters; in planning for them, should attempt to identify them in the hospital population and community.

State Other		Emergency management needs training in how to request supplies and realistic expectations. Mississippi has no acquisition or tracking system and no one trained in logistics – need proper human and information technology resources.
Local	Opened on time DMAT Cooperation between staff	Need Mass Care plan, including special medical needs plan; preplan and stockpile resources and supplies according to a plan. Should plan to have back-up locations → avoid locating shelters in disaster areas. Separate special needs shelters and staff them with appropriately trained personnel. Train and then be able to include support staff in the staffing of shelters, especially for the special needs shelters. Chain of command. Communication within shelters. Record keeping, including who is in the shelter.
State	Maintained composure and followed protocols thanks to practice. PH nurses were able to serve as patient care nurses. The process for activating and pre-staging teams was effective. Shelters well advertised to the public.	DHS field staff needs training. Wiser, more realistic pet policy – no room for handling people with pets, so they were turned away. Better triage at shelter to identify patients with special needs. Need earlier deployment of MH/SW; no oral health → neglected non-allopathic needs Better advertise location of shelters pre-disaster. Should inventory needs when planning.
EMS	Law enforcement's initiative to appropriate food and medications from the local community. Locals coordinated and planned well, and were able to cooperate between their own local agencies.	Red Cross completely failed – they should not be involved; AMR was not cooperative with local agencies. Shelter security must be improved. Need a plan for pets. Special needs shelter should be mandated and should be staffed by professionals. Improve infrastructure overall; include infrastructure considerations in planning shelters – should pre-deploy supplies, staff and intra-shelter communication tools.

Federal		Food and water should be pre-deployed.

4.21.0 Fatality Management

On-line Survey: No. of responses = 13

Performance Measures	% Yes
Victims families were contacted	76.92
Victims were identified	69.23
DMORT resources were available	84.62
DMORT response was adequate and proactive	76.92
Coordination between medical examiner/coroner and public safety personnel was established	69.23
Personal effects and evidence were correctly managed	69.23
Remains were handled appropriately	76.92
Remains were properly and effectively decontaminated	Not enough respondents
Locations for a temporary morgue were established near incident site	92.31
Sufficient PPE available to protect workers involved in fatality management	76.92
A plan for temporary storage of remains was activated	84.62
Coordination between medical examiners and EOC was established	76.92
State Medical Examiner office was included in EOC	38.46
A victim search and recovery plan was established and utilized	84.62
A victim labeling system was established and utilized during search and recovery efforts	76.92
Adequate personnel were available for search and recovery efforts	38.46
Victim collection points were established for temporary storage of victims awaiting transport	76.92
A system was established for transportation of recovered victims to the morgue facility	92.31
Sufficient number of refrigerated trucks were available for storage and transportation of victims to the morgue facility	69.23
A system was established with medical facilities/triage to ensure all hurricane related deaths were reported to the ME office	38.46
An ME protocols was established regarding handling of medical facility related hurricane deaths	23.08
Collection points were established at medical facilities for storage of all hurricane related victims prior to transport	46.15
A family assistance center (FAC) was established	46.15
A representative of the ME office was assigned to the (FAC)	23.08
A family victim identification center was established for collection of ante-mortem identification information	46.15
An autopsy protocol was established for the victims	53.85
The autopsy protocol included handling of body part and tissue fragments	46.15
A death certificate protocol was established addressing uniformity and standardization of terminology of all victims	38.46
A fatality data collection system was established to ensure proper	69.23

documentation of victims	
A record of disaster related obligations, work hours and expenditures was maintained	76.92
A system was established for the handling of non-hurricane related ME deaths	38.46

Issues

- MS has no state medical examiner
- County coroners refused to cooperate with each other or state ESF 8
- Victim search disorganize
- Needed more personnel for search and rescue
- Not enough refrigerated trucks right away

Key Responder Interviews

Responder Type	Worked Well	Needs Improvement
Medical	Coroner Local Funeral homes DMORT	Increase size of morgue "Build in regional overflow capabilities across continuum"
State Other		Plan for DMORT
Local	DMORT – quick to arrive and effective. Establishment of the Missing Persons Task Force.	Need some sort of capability/program similar to DMORT at the local/state level Have an effective preplan that includes agreements for manpower, safe storage of key assets, location and storage of backup supplies. Integrate coroner into disaster planning process; establish an ESF for fatality management and an MFMP that outlines the roles, functions and authority of coroner and State during emergencies.
EMS	DMORT Good coordination with local Law Enforcement.	Follow the Mass Fatality plan.
Federal	Coordination and interaction between most entities at most levels. Determining the site of the temporary morgue; done quickly and collaboratively with all involved parties. Missing Person Task Force: once	Eliminate power struggles, which lead to an absence of clear authority over fatality management → this caused DMORT to act as a mediator, which is not its role and which detracted from their ability to fulfill their mission. Need MFMP that outlines roles, function

	able to identify people who left the area enhances their ability to identify the dead. Volunteers well trained. DMORT GBI	and authority of local coroner and State Health Department, then follow the plan → better integrate fatality management into disaster management. Eliminate coroner system Uniform use of scientific standards to identify fatalities. Better understanding of DMORT function by local coroners. Wrap around for staff and volunteers. Better resources: regional morgue, dedicated vehicles, and better/more resilient communications equipment.

V. CONCLUSIONS

Summary

MDH AAR data collection included an on-line survey and key responder interviews. Respondents to the on-line survey (n = 359) and interview participants (n = 93) were medical and public heath responders during MDH response to Hurricane Katrina. On-line survey respondents and interview participants work in a variety of medical and public health job categories and reported a range of daily places of work. Most respondents reported that they worked at the State or District MDH offices. Respondents performed a variety of tasks and functional roles during Hurricane Katrina response. In terms of preparation for their functional roles, respondents reported a range of preparation for their functional roles during Hurricane Katrina response from minimum to maximum preparation.

The majority of Target Capability List sections had multiple performance measures with less than 60% of on-line survey respondents choosing the "yes" response. In a number of these cases, 20 to 30% of respondents also choose the "unknown" response. The sections where less than 60% of respondents choose the "yes" response are provided below along with selected recommendations for improvement from the on-line survey and key responder interviews. These are highlights of recommendations and not exhaustive of the recommendations that can be found in the Results section of this report.

Responder Survey Recommendations

1.10 Planning

- Need more NIMS training
- Plans need to address worst case scenarios
- Improve communications components of planning
- Need to update plans during response

1.2.0 Interoperable Communications

- Magnitude of disaster greater than communications plans
- Inadequate and incompatible communications systems
- Back up systems failed

3.4.0 Public Health Epidemiological Investigation and Laboratory

- Unclear about what was considered an outbreak
- Need standardized reporting forms

3.5.0 Citizen Preparedness

- Improve and increase communications to public, including reaching public at shelters and providing non-English communications

4.3.0 Resource Logistics and Distribution

- Resource requests took a long time to get filled and were often not accurately filled
- MS needs to have a resource tracking system
- Communication and coordination between shelter, field operations and MEMA/FEMA need to be improved
- Stockpiled supplies not what was needed, what was needed was food and fuel, items not stockpiled to meet a hurricane
- Pre-plan centralized staging and pre-staging.

4.4.0 Volunteer Management and Donations

- Private charities much more efficient at setting up and managing donation sites
- Credential volunteers BEFORE allowing them into the Hurricane zone and require shelter-training certification.
- Need a check in point for volunteers and a center for donations along with security and a system to determine the allocation of donations and manpower.
- Need volunteer coordinator as permanent IC position.
- Need multiple staging/warehousing areas.

4.12.0 Citizen Protection Evacuation

- Need mass care coordinator position.
- Need more special needs shelters.
- Need ability to track bed count; coordinate resources through Emergency Management.
- Set up shelters earlier and begin evacuation sooner.

4.16.0 Triage and Pre-hospital Treatment

- Need to include all involved entities in planning process.
- Pre-establish collection points for decompression.
- Emphasize that patient needs are more important than contractual arrangements.
- Further train paramedics so that they are better able to perform the expanded roles they were given.

4.17.0 Medical Surge

- Needed more staff to provide care, but mainly relief staff.
- Should consider establishing MOUs with facilities farther north so that decompression of patients will involve getting them out of harm's way.
- Use local physicians whose facilities were destroyed rather than import help.
- Better monitor location and availability of volunteer medical staff.
- State should develop State Medical Assistance Team

4.18.0 Provide Medical Care

- Need inventory system and organized process for collection/pick-up and delivery/distribution.
- Clothes, food and fuel should be managed apart from medical supplies.

- Consider providing free meds to pharmacies to distribute in order to keep people out of the ED.
- Pre-plan with vaccine vendors.
- A share of the SNS should be allocated for local use.

4.19.0 Mass Prophylaxis

- Pediatric supplies should be included instead of what someone thinks the facility needs.
- Essential to have information about estimated arrival and disposition of the order.
- Make sure medications are not expired.
- Maintain site confidentiality.

4.20.0 Mass Care

- Need Mass Care plan; including special medical needs plan; preplan and stockpile resources and supplies according to a plan.
- Train and then be able to include support staff in the staffing of shelters, especially for the special needs shelters.
- Wiser, more realistic pet policy – no room for handling people with pets, so they were turned away.
- Need earlier deployment of MH/SW; no oral health, neglected non-allopathic needs
- Improve infrastructure overall; include infrastructure considerations in planning shelters – should pre-deploy supplies, staff, and intra-shelter communication tools.

4.21.0 Fatality Management

- Integrate coroner into disaster planning process; establish an ESF for fatality management and an MFMP that outlines the roles, functions and authority of coroner and State during emergencies.
- Uniform use of scientific standards to identify fatalities.
- Better understanding of DMORT function by local coroners.
- Wrap around for staff and volunteers.

Several recommendations for improvement call for tracking and monitoring improvements, for resources, medications, and personnel and patients. Additional cross-cutting recommendations include improved coordination and communication between state and local government and voluntary agencies.

VI. LIMITATIONS

The following are limitations to the findings of this report. The primary limitation is that this is the first use of the TCL Capability Performance Measures to create data collection instruments for an AAR. Due to time and resource limitations, we could not validate the measures. While the focus of the study was ESF 8 related Capabilities, it was difficult to determine which Performance Measures should be used that would be most relevant to ESF 8.

The NC team chose to include general Capabilities, such as 1.1.0 Planning although we realized that it might difficult for respondents to evaluate MDH on all of these measures. This was the greatest limitation to this approach. Having all respondents who worked on a Capability respond to all Performance Measure within a Capability meant that a number of these respondents might not have first hand knowledge of a specific Performance Measure. This was reflected in the high percent of "unknown" responses in the Results. Respondents may have also chosen the "unknown" response because they did not understand the Performance Measure or they chose "unknown" instead of "no" because they did not want to explain their response.

The data collection instruments were imbalanced in terms of the number of Performance Measures among the Capabilities. This reflected items of interest to MDH and the NC Team. This resulted in fewer items on public health Performance Measures and a greater number of items in medical care. This may have skewed the data collection and resulted in fewer public health specific recommendations.

The data collection instruments have not been checked for validity and reliability. Face and content validity of the instruments should be quite high because the items are directly from HS Target Capability List Performance Measures.

Due to time limitations, the process for creating and pre-testing the data collection instruments was not complete. The on-line survey did not go through complete review and pilot testing, there was minimal review by the NC team of the responder interview protocol, and there was limited training of interviewers and inconsistent training of the interviewers. There were items missing from the on-line survey and the interview protocol and questions could have been further refined to improve precision of results.

Mississippi Department of Health
Hurricane Katrina After-Action Review
Community Assessments Report
May 11, 2006

I. Introduction

In February and March of 2006 the North Carolina Division of Public Health and the Office of Emergency Medical Services assisted the Mississippi Department of Health (MDH) in conducting an after-action review (AAR) of the MDH response to Hurricane Katrina. The AAR was conducted by gathering data using three methods; an on-line survey for Emergency Support Function 8 (ESF-8) responders statewide, on-site interviews with key ESF-8 responders in MS, and a community assessment that is the subject of this report.

II. Objectives

The objective of the community assessment was to conduct household interviews to measure the impact and effectiveness of MDH preparedness and response activities on three distinct populations of citizens in three Mississippi communities that were heavily impacted by Hurricane Katrina.

III. Methods

A modified cluster sampling method was used to collect household data. Similar methods have been used for post-disaster rapid community health and needs assessments by the Centers for Disease Control and Prevention, the NC Division of Public Health and others (REFERENCES).

Three assessment areas were selected in order to collect information from three distinct populations of households that were heavily impacted by the hurricane. A sample from Jones, Pike and Forrest Counties was selected to represent a rural population (FIGURE 1), the city of Jackson was selected to represent an urban population (FIGURE 2), and coastal portions of Hancock and Harrison counties were selected to represent coastal populations (FIGURE 3). The assessment areas were selected by MDH.

For each of the three assessment areas, year 2000 census data and year 2004 household projections were used to randomly select 30 census block groups from all census block groups in the assessment area with probability of selection proportionate to the number of housing units in the census block group. ARCGIS mapping software was used to generate and map seven spatially random points in each of the 30 census block groups. Interview teams were routed to the points in the block group using global positioning systems (GPS) and collected interviews from the occupied household nearest each point for a total of approximately 210 interviews for each assessment area.

The survey instrument's questions were developed using the Federal Emergency Management Agency Targeted Capabilities List and MDH hurricane preparedness and response outreach information. Citizens were asked if they received information distributed by MDH before and after the hurricane, if they made use of the information, and what the most useful sources of information were before and after the hurricane. Questions were also asked about shelter and special needs citizens evacuation and shelter use. The questionnaires contained approximately 25 questions and took approximately 10 to 15 minutes for interviewers to complete (**APPENDIX E**).

Because there was significant disruption of health care provision in the gulf coast assessment area, questions about health care facilities utilization were added to the questionnaire for the coastal assessment (**APPENDIX F).**

IV. Results

The urban and rural assessments were completed the week of February 14, 2006. Ten teams of 2 MDH staff made up the interview teams for those assessments. The teams were trained and deployed by a NC team and collected 208 household interviews for the urban assessment and 195 for the urban assessment. The gulf coast assessment was completed during the week of March 13, 2006. The NC team that led the urban and rural assessments, led a team of volunteers from the University of North Carolina School of Public Health that gathered 211 interviews.

Urban Community Assessment Key Findings

Demographics

- 79% of households were single family homes
- 13% of households were 2 to 5 family units
- An estimated 3% of households in the assessment area (95% confidence interval 0-6%) had occupants who were living there because their home had been damaged or destroyed by the hurricane.
- 8% of households had one or more occupants < 2 years of age
- 27% of households had one or more occupants > 65 years of age

Sheltering/Special Needs Household Proportion Estimates

- An estimated 20% of households in the assessment area (95% confidence interval 18-38%) received instructions before the hurricane to notify authorities about household members with special needs
- 4% of households (C.I. 1-6%) had a household member with special needs before the hurricane
- 1% of households (C.I. 0-2%) notified authorities before the hurricane that they had a household member with special needs
- 72% of households (C.I. 65-79%) received information about local shelter locations

Environmental Health Household Proportion Estimates

- An estimated 65% of households in the assessment area (C.I. 57-72%) received food safety information before the hurricane
- 75% of households (C.I. 68-81%) received drinking water safety information before or after the hurricane
- 54% of households (C.I. 47-61%) received information before or after the hurricane about avoiding mosquito exposure
- 39% of households (C.I. 26-50%) received information about safe operation of gasoline powered electrical generators before or after the hurricane
- 12% of households (C.I. 6-17%) used a gasoline powered electrical generator after the hurricane

Rural Community Assessment Key Findings

Demographics
- 68% of households were single family homes
- 18% of households were 2 to 5 family units
- 5% of households were mobile homes
- An estimated 10% of households in the assessment area (95% confidence interval 5-15%) had occupants who were living there because their home had been damaged or destroyed by the hurricane.
- 11% of households had one or more occupants < 2 years of age
- 26% of households had one or more occupants > 65 years of age

Sheltering/Special Needs Household Proportion Estimates
- An estimated 21% of households in the assessment area (95% confidence interval 15-28%) received instructions before the hurricane to notify authorities about household members with special needs
- 7% of households (C.I. 3-10%) had a household member with special needs before the hurricane
- 3% of households (C.I. 1 –6%) notified authorities before the hurricane that they had a household member with special needs
- 68% of households (C.I. 60-76%) received information about local shelter locations

Environmental Health Household Proportion Estimates
- An estimated 59% of households in the assessment area (C.I. 51-66%) received food safety information before the hurricane
- 76% of households (C.I. 67-85%) received drinking water safety information before or after the hurricane
- 38% of households (C.I. 28-47%) received information before or after the hurricane about avoiding mosquito exposure
- 47% of households (C.I. 39-54%) received information about safe operation of gasoline powered electrical generators before or after the hurricane
- 37% of households (C.I. 23-52%) used a gasoline powered electrical generator after the hurricane

Gulf Coast Community Key Findings

Demographics

- 34% of households were single family homes (other than FEMA trailers)
- 3% of households were 2 to 5 family units
- 53% of households were FEMA trailers
- An estimated 64% of households in the assessment area (95% confidence interval 49-78%) had occupants who were living there because their home had been damaged or destroyed by the hurricane.
- 5% of households had one or more occupants < 2 years of age
- 35% of households had one or more occupants > 65 years of age

Sheltering/Special Needs Household Proportion Estimates

- An estimated 21% of households in the assessment area (95% confidence interval 15-28%) received instructions before the hurricane to notify authorities about household members with special needs
- 12% of households (C.I. 7-17%) had a household member with special needs before the hurricane
- 1% of households (C.I. 0 –3%) notified authorities before the hurricane that they had a household member with special needs
- 68% of households (C.I. 60-75%) received information about local shelter locations
- 11% of households (C.I. 6-16%) had a household member that went to a shelter before of after the hurricane

Environmental Health Household Proportion Estimates

- An estimated 43% of households in the assessment area (C.I. 33-53%) received food safety information before the hurricane
- 75% of households (C.I. 67-83%) received drinking water safety information before or after the hurricane
- 53% of households (C.I. 45-60%) received information before or after the hurricane about avoiding mosquito exposure
- 52% of households (C.I. 45-60%) received information about safe operation of gasoline powered electrical generators before or after the hurricane
- 42% of households (C.I. 32-52%) used a gasoline powered electrical generator after the hurricane.

Injury and Illness Household Proportion Estimates

- An estimated 10% of households (C.I. 5-14%) had a household member who was injured as a result of the hurricane
- An estimated 36% of households (C.I. 31-41%) had a household member who has had an illness they believe was related to the hurricane

Health Care Facilities Utilization

- 64% of households (C.I. 56-73%) used private health care providers as their primary source of health care prior to the hurricane
- 6% of households (C.I. 3-8%) used public or free health care providers as their primary source of health care prior to the hurricane
- 51% of households (43-59%) used a tent or mobile hospital as their primary source of health care in the first 2 months following the hurricane
- 23% of households (C.I. 15-31%) used the same health care facilities in the first 2 months following the hurricane that they had used prior to the hurricane
- 2% of households (0.2-5%) were unable to obtain medical care in the first two months following the hurricane
- 18% of households (C.I. 11-24%) did not need health or medical care in the first two months following the hurricane
- 71% of households (C.I. 64-78%) received information about the availability and location of health care facilities in their communities following the hurricane

V. Conclusions

The data and findings in this preliminary community assessment report will be further analyzed so that conclusions and recommendations for action can be offered. This data from this assessment will be compared with data from the key responder interviews and the on-line survey that comprise the balance of the after-action data collection tools. Preliminary conclusions offered here are based only on the data in this report.

Environmental Health

- The data suggest that efforts to provide citizens with information about food and drinking water safety were successful. A large proportion of the population received the information in all three assessments. Outbreaks of gastrointestinal illness, some attributed to unsafe food and water, are often reported following natural disasters in developed countries.
- A large proportion of households in the coastal and rural assessments reported use of portable gasoline generators, which is consistent with national trends that suggest more prevalent use of portable generators following power outages. Injuries resulting from electrocution, fires and carbon monoxide poisoning have been widely reported, and are associated with unsafe operation of the generators. The data suggest that the outreach information about safe generator operation did not reach as large a proportion of citizens as did other environmental health outreach efforts. Because the proportion of the population that is at risk from use of generators is large and appears to be growing, increased focus on safe generator operation outreach is recommended. The proportion of households that received information about safe generator use increased was higher in the urban and coastal assessment areas where the proportion of households using generators was higher. This

suggests that users received information from vendors or from manufacturers instructions, or that they sought the information prior to or during generator use.

- Provision of outreach information about avoiding mosquito exposure and eliminating mosquito breeding sites was not as successful as for food and water supply safety. More than half of the households received the information in the coastal and urban assessment areas, however. Increased focus on mosquito exposure control outreach is recommended.

Sheltering/Special Needs Populations

- The TCL directs ESF-8 agencies to notify citizens to make local officials aware of household members with special needs prior to a disaster. A relatively small proportion of households in all three assessment areas received or recalled receiving that information. A relatively small proportion of households in all three assessment area had household members with special needs, and a small proportion of those households notified local officials about household members with special needs. Increased outreach effort is recommended.
- A relatively large proportion of households in all three assessment areas received information about locations of local shelters before and after the hurricane. Outreach efforts seem to have been successful.

Health Care Utilization (Gulf Coast Assessment Only)

- A large proportion of citizens in the gulf coast assessment area (51%) utilized tent or mobile hospitals in the first two months following the hurricane. Conversely a relatively small proportion of households (18%) did not need health care during the first 2 months following the hurricane. Only 2% of households were unable to obtain health in the first two months following the hurricane. These data suggest that there was significant need for health care in the Gulf Coast assessment area following the hurricane and that temporary health care facilities in combination with continued operation of existing facilities successfully filled the need.

Assessment Limitations

Household Projections

It is possible, when using census data to generate a cluster sample, to provide numerated household projections. For example, in the urban assessment the census reports 60,815 households in the assessment area. The proportion of households with a specific characteristic (e.g., household member with special needs) is estimated from the sample and the total number of households with that characteristic can be projected. For example:

An estimated 7% of households in the rural assessment area (95% C.I. 3-10%) had a household member with special needs. There are 60,815 households in the assessment area:

$$0.07 \times 60{,}815 = 4{,}257$$

It can then be estimated that 4,257 households in the assessment area (95% C.I. 4,257–6,081) had a household member with special needs.

These estimates are particularly useful when estimating post-disaster population needs such as the number of households in an assessment area using bottled water. For this after-action review the household estimates may not be more meaningful than the proportional estimates. Additionally, census data are likely to inaccurate because of significant population movement since the hurricane, particularly in the coastal assessment area.

Inaccuracies in the census data may have also had some impact on sample selection, and data analysis; in both cases with regard to population weighting.

Figure 1

Mississippi After Action Review Assessment Jackson Metro Area with Randomized Block Groups and Assessment Households

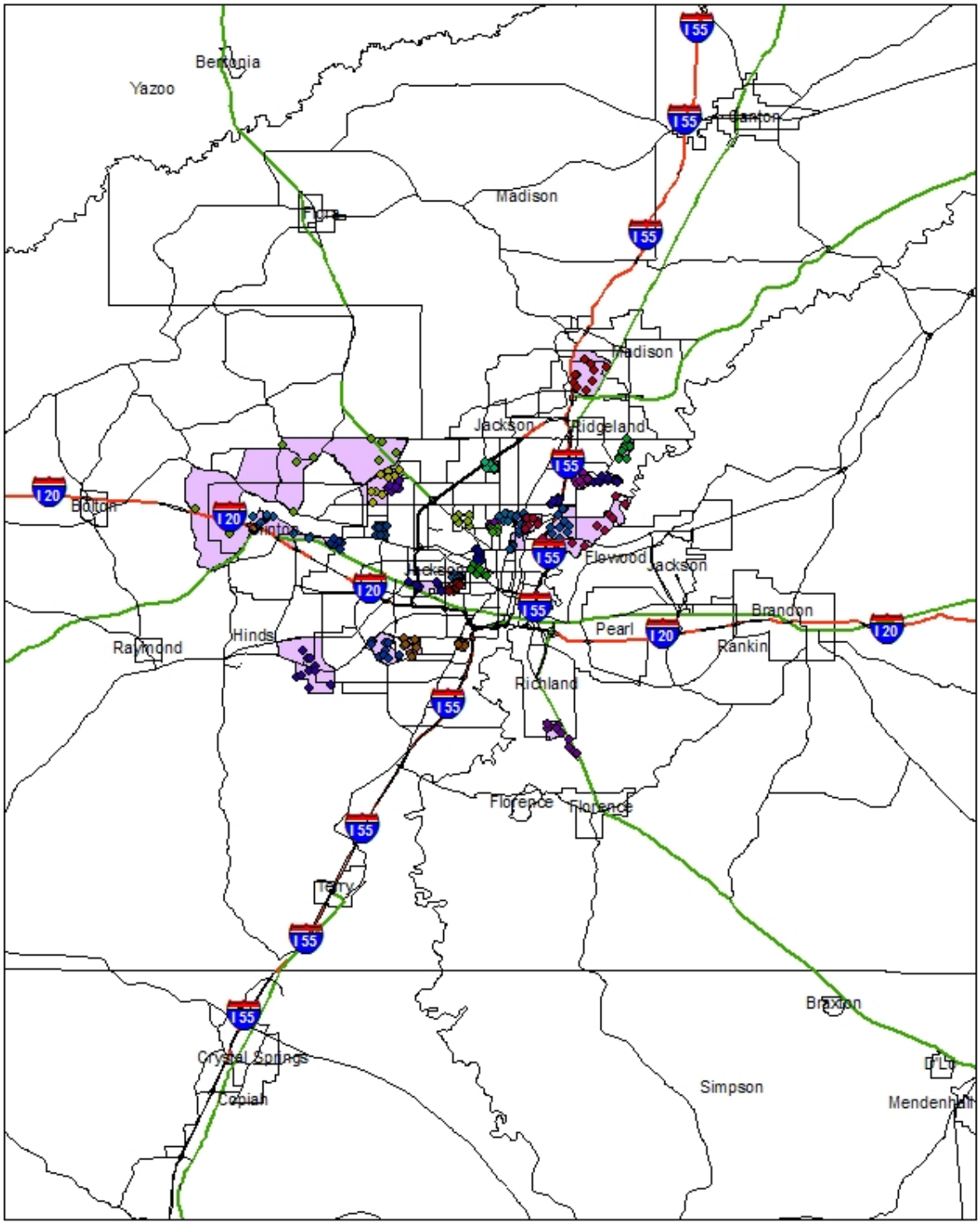


Figure 2

Mississippi After Action Assessment
Rural Assessment Counties,
Randomized Block Groups and Stops

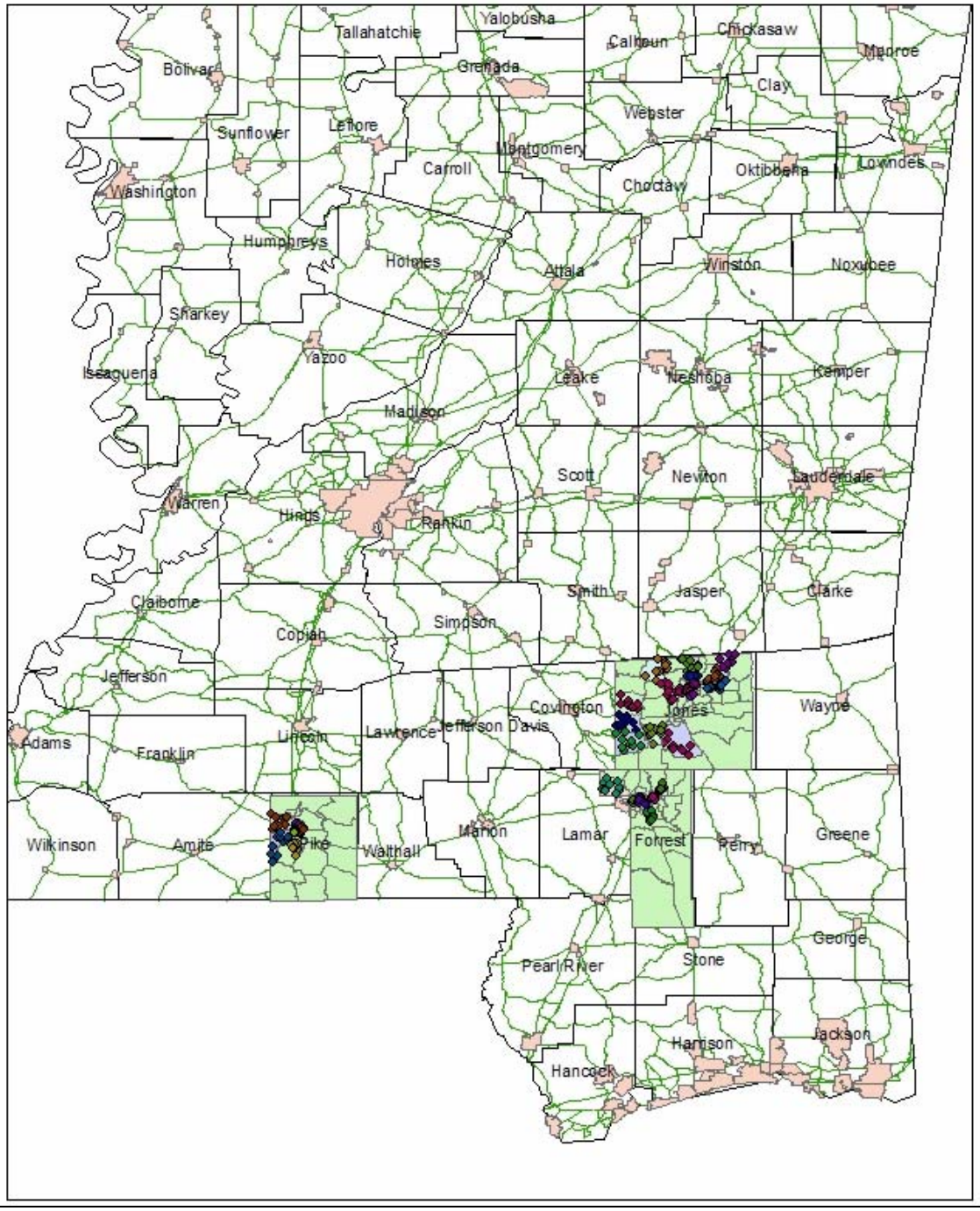
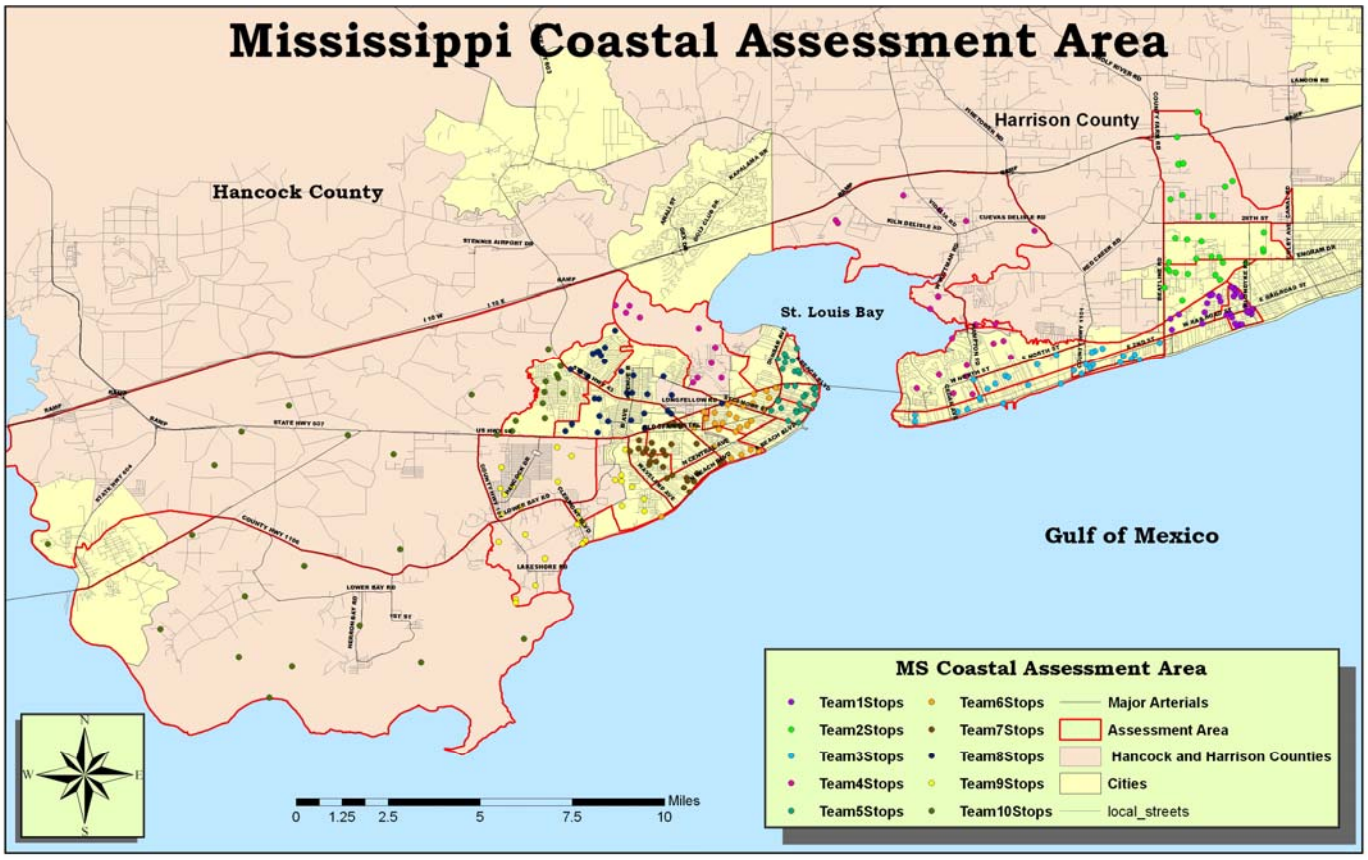


Figure 3

Mississippi After Action Assessment

Gulf Coast Assessment

Randomized Block Groups and Stops



Key Findings
Household Proportion Estimates

Demographics and Self-Reported Illness/Injury (Household Proportions)			
	Urban	Rural	Coastal
Single Family Homes	79%	68%	34%*
FEMA trailers	-	-	53%
Living in the home because previous home damaged or destroyed	3%	10%	64%
HH member <2 YO	8%	11%	5%
HH member >65 YO	27%	26%	35%
Hurricane related illness	2%	9%	36%
Hurricane related injury	1%	4%	10%

*Does not include FEMA trailers

Sheltering/Special Needs Household (HH) Proportion Estimates			
	Urban	Rural	Coastal
Informed of Shelter locations	72%	68%	68%
Informed to notify officials of special needs HH member	20%	21%	21%
HH member with special needs	4%	7%	12%
Notified officials of special needs HH member	1%	3%	1%

Environmental Health Household (HH) Proportion Estimates			
	Urban	Rural	Coastal
Received food safety information	65%	59%	43%
Received drinking water safety information	75%	76%	75%
Received mosquito exposure control information	54%	38%	53%
Used a generator	12%	38%	42%
Received information about safe generator operation	39%	47%	52%

Most Useful Information Sources After the Hurricane Household Proportion Estimates			
	Urban	Rural	Coastal
Newspaper	5%	5%	2%
Radio	25%	42%	23%
Televsion	50%	20%	30%
Church/Community Group	2%	5%	4%
Family/Friends	12%	19%	19%

STATEWIDE RECOMMENDATIONS

Overarching Capability Recommendations

- ***Establish Emergency Service Advanced Registry for Volunteer Healthcare Professionals to include notification and call back. Further recommend state legislation to protect the personnel housed in this registry for workers compensation and liability for non Federal declarations of disasters***.

- ***Establish and implement a Mississippi State Medical Response System based on a tiered system consisting of local, regional, and state medical personnel. Teams would provide a pre credentialed, trained, organized, and well equipped group of responders. Recommend utilizing the three trauma centers to base regional teams staffed by healthcare personnel from hospital***

- ***Create a statewide Geographic Information System (GIS) to map all medical resources, personnel, and hazards. This system will act as a multi hazards threat database for MDH use and will contain licensed facilities, ambulances, personnel, resources, hazards, as well as other mapping qualities.***

- ***Mass Evacuation orders for facilities need to be evaluated and healthcare facility plans should acknowledge the catalyst present to evacuate.***

- ***Selection and purchase of a statewide logistical resource tracker for local, regional, and/or statewide tracking system.***

- ***Identify a method standardized method of triage for statewide use. Develop training for triage and identify IT system to incorporate into patient tracking and tracing.***

- ***Statewide tracking of patients needs to be implemented. Consideration should be given to integration of tracking system into State Medical Asset Tracking Tool, Emergency Services Advanced Registry for Healthcare Providers, Geographical Information Systems Multi hazard Threat database, Electronic surveillance, and medical product inventory management system.***

- ***Identification of training standards for all healthcare disciplines concerning NIMS, hazardous materials training, communication, responder health and safety, weapons of mass destruction, and surveillance. I.e. First Receiver, Advanced Disaster Life Support, and Hazwhopper.***

- ***Consider purchase of mobile treatment centers for the three regions to increase surge capacity statewide. This initiative should be considered for integration and use by the medical assistance teams and should be hospital based for use in non disaster situations such as sporting events and other large mass gatherings.***

- ***Consideration of Mass evacuation units for mass transport of special medical needs residents to include facility and home based MS residents.***

- ***Type all Mississippi response and recovery assets and integrate into the State Medical Asset Resource Tracking Tool (SMART) for deployment, inventory management, and rapid mobilization.***

- ***MDH should consider hiring a State Medical Examiner for statewide initiative. In addition, the development of regional morgues in the three districts should be considered.***

- ***Laboratory surge capacity should be addressed by MDH. Consideration of upgrading trauma center laboratories to meet potential surge needs may be one solution to the upgrade needs after state laboratory is revised and rebuilt.***

1.1.0 Planning

- The development of a catastrophic plan to include all stakeholders. Special focus should be placed on the overlap between Emergency Support Function 8 and Emergency Support Function 6.
    - Roles and responsibilities should be clearly defined for MDH and the Department of Social Services.
        - The State plan should follow the National Response Plan and address all the Target Capabilities to include the latest additions to the plan.
- The Catastrophic plan should include the placement and subsequent sheltering of all Mississippi residents in regards to acuity and needs based on illness and wellness models.
- Personnel should be addressed in the catastrophic plan and should include roles and responsibilities of volunteers in relation to the assignments.
- Plan revisions should occur annually and a plan put in place for staff training on the plan and subsequent revisions.
- Stakeholders should be engaged and given opportunity to comment on plan before final version released.
- Consideration of Hospital to Hospital Mutual Aid.
- Consider the creation of a Tiered State Medical Response System identifying local, regional, and state response entities.
    - Team development at all levels to include EMS, Hospitals, Long Term Care, Home/Hospice Care, Community Health Centers, Health Departments, and Assisted Living to address all levels of patient acuity.

1.2.0 Interoperable Communications

- Consider adding HAM radios for secondary back up systems.
- Consider adding mobile command unit for forward deployment to include satellite IT.

2.1.0 Information sharing and Communications

- Consideration of specialized training for Public Information Officers.
    - PIO team development and pre designated staging and command centers for personnel.
    - Identification of roles and responsibilities of the PIO with Standard Operating Procedures formalized for all PIOs statewide.
- Development of PIO task force to strategically plan for statewide training and dissemination of such training.
- Consider adding larger media personnel to this group for a coordinated effort. Network and build relationships through this group for Joint Information Center development and implementation.
    - Some deliverables for this group should be the identification of which of the PIOs will be, where they will be working, and how often communications should be released at the county, regional, and local levels.
- Continue utilizing HANs or SMART to disseminate specific threat information to healthcare facilities.
    - Consider the addition of other healthcare agencies and facilities to these systems for more streamlined and consistent communications.
- Continue to plan for absence of TV and other media in impacted areas and have consistent contingency plan for paper and other methods.
    - PIO teams could possible be deployed to impacted areas to coordinate closer with County and State through the JIC.
- Threat and risk communications such as generator exhaust precautions should be pre developed for rapid use.

3.1.0 Critical Infrastructure Protection

- Reevaluate and re define critical infrastructure statewide. Multiple stakeholders should be involved. Fuel should be addressed in the state plan and should be addressed in relation to healthcare personnel. This may include the identification of all healthcare workers as responders to allow for re fueling for healthcare workers.
- Request sustainability funding for healthcare facilities to provide for the maintenance and upkeep of generators and stockpiling of fuel, food, and water.
- Consider more frequent inspections and upgraded regulations for all licensed healthcare facilities in relation to generators and other critical disaster preparedness infrastructure.
- Consider new ways of stockpiling medical equipment that can be used on a daily basis to augment existing supplies such as placement of equipment for evacuation, treatment, and transport in Junior Colleges that can be used daily to upgrade allied health programs.

3.3.0 Food and Agriculture Safety and Defense

- Consider identifying specific personnel to coordinate from the County EOC, District Command Center, and then State EOC food safety.
    - It is suggested that this be a critical component of the ESF 8 recovery plan as well and becomes more robust in the catastrophic plan.
- Consider recognition of a few Faith Based Agencies as feeding entities and train these entities in food preparation.
- Identifying these agencies as the responsible partner to support the community by food preparation would allow pre event training on food handling and decrease the need for "just in time" training on preparation and delivery.
- It would also allow MDH to have more control over resupply of these feeding stations and monitoring of sources and quality of food.
- Consider evaluation of current state laws governing food preparation and any needed changes therein to support needs during disasters. I.e. does this need to be relaxed during the response and recovery periods?
- This would pertain to restaurants and other commercial vendors.
- Shelter training should include the rules governing food handling and basic techniques.
- Pre identified food sources may need to be established under the guidance of MDH.

3.4.0 Public Health Epidemiological Investigation and Laboratory

- Consider development of patient tracking and treatment form to incorporate all surveillance data point for outside resources to use in all settings.
    - If this system is to be used in paper format MDH personnel could enter manually until IT systems are back up and running.
- Consider new state laboratory and development of more robust laboratory plan.
- Consider regional laboratories or upgrading larger hospital laboratories to ramp up capacity for redundant lab capacity.

3.5.0 Citizen Preparedness

- Identify Regional Evacuation Evaluation Sites for sheltering and care of all citizens. Involve all communities in education on the plan.
- Engage all stakeholders in the planning and implementation process.
- Consider Mutual Aide with mass transportation for indigent populations for pre storm evacuations.
    - Development of Mass Evacuation Transportation task force to pre identify MS Department of Transportation and other assets and identify numbers to be moved.
    - Responsibility of pre identification of indigent residents to be moved may be county, region, or state and can be determined by this designated task force and advisement given to MDH for integration into state plan.
- Development of Mass Evacuation plans involving counties and multiple stakeholders.
- Consider more fluid methods of non English information methods.

4.1.0 On-site Incident Management

- Increased training of all state, regional, and local ESF 8 staff on ICS. Consider mandatory levels of ICS training for specific roles within each command staff structure with **minimal levels supported by current NIMS standards**.
- Consider Emergency Services Advanced Registry for Volunteer Healthcare Professionals for statewide registry of developed response teams, paid or volunteer.
    - Experience as well as credentials may be integrated into the system up in development to include ICS training and other pre identified training set by MDH to deploy highly qualified individuals for specific roles in response and recovery.
    - Typing of individuals as well as teams would mitigate inexperienced personnel being assigned to key positions requiring higher levels of training.
- MDH may consider conducting training and exercises with key response staff quarterly and rotating staff for added depth for such roles for longer occurring activations.
    - Inclusion of Federal partners in at least two drills per year may also mitigate some of the confusion over roles and responsibilities and Unified Command.
    - Would further recommend Unified Command 101 and Enhanced UC for all MDH response staff.

4.2.0 Emergency Operations Center Management

- Consider provision of HRSA BT preparedness funds to continue HEICS training for hospitals.
- Utilize State task force to discuss and NIMS compliance in all healthcare facilities licensed by the State.
    - Identify levels of training for facilities and review current State rules and regulations governing facilities and annual required training for EMS, Hospital, and Facility staff.
- Review current command centers and seek funding for upgrades in identified areas for upgrades and technology additions.
    - Integrate assessment findings and PI plan into State strategy as well as identification of appropriate funding source for CC upgrades i.e. HRSA, CDC, or DHS money.
    - Consider contingency planning for expansion or movement for redundant or back up CC areas. Map CCs into Geographical Information System.

4.3.0 Resource Logistics and Distribution

- Development of emergency guidelines for logistics to include standard operating guidelines and subsequent training for MDH employees performing those roles. Identification of staging sites for product and map into state GIS system for reference for MDH command staff.

- These SOPs should be appendixes the state plan to make them available to MEMA for reference.

- Re-evaluate current MOUs with private contractors and renegotiate contracts to ensure faster and more consistent response to needs and requests during an event.

4.4.0 Volunteer Management and Donations

- Explore MOU possibilities with RX companies and private industry for volunteers and add to the State volunteer registry (ESAR VHP).
- Map volunteers into state GIS system for quick reference via MDH personnel.
- Stage credentialing sites for volunteers and map into GIS for reference.
  - Clearly identify sites in state plan and involve stakeholders for county, region, and state.
- Consider appointing ESAR VHP and/or Volunteer Coordinator as FTE within the MDH structure.
- Develop Standard Operating Procedures and guidelines for volunteer management for addition into the MS Comprehensive Emergency Management Plan Emergency Operations Plan.
  - These should be consistent with the National Response Plan.

4.5.0 Worker Health and Safety

- Incorporate responder health and safety into State Medical Assistance Team training.
  - Utilization of current training delivered in other states to mitigate extended hours and fatigue of healthcare workers and integrate mental health services for responders and team members deployed for recovery.
- Evaluate the MS Comprehensive Emergency Management Plan and the National Response Plan Worker Health and Safety section and identify gaps in response and recovery plans.
  - Develop state plan and consider adding Department of Labor, OSHA and other state agencies to support efforts as consultants and additional response entities.

4.7.0 Animal Health Emergency Support

- Consider developing County Animal Response Teams for local response and containment of animals and animal health issues to flow into a State Animal response Team further supporting a tiered response system for animals.

4.8.0 Environmental health and Vector Control

- See PIO plan and team development.

- Increased focus on mosquito exposure control outreach is recommended.

4.12.0 Citizen Protection Evacuation

- Pre identify sites for mass evacuation and triage of patients that need to be sheltered.
- Train teams to support this function and identify roles and responsibilities for shelter responders and logistical personnel.
    - Consider the use of Community Colleges for sheltering and care of special needs patients.
    - Pre Identifying sites for sheltering allows for redundancy planning and mitigation public confusion on sheltering sites.
    - Additional medical equipment must be purchased for shelters for upgrading of system.

4.16.0 Triage and Pre-hospital Treatment

- MDH needs to identify a standardized triage system for the state and incorporate it into the MS CEMP as well as team training for Smuts.
- Identify EMS as critical resource in the state MS CEMP for refueling.
- Roles of MDH EMS office needs to be clearly defined after re evaluation.
- Create a state cache of communication equipment for incoming Mutual Aide.
- Identify staging and credentialing sites for ambulances and map them into GIS.
    - Incorporate these into the MS CEMP

4.17.0 Medical Surge

- See overarching recommendations.
- Consider purchase of Field Hospitals for Mobile Medical Response.
    - Teams would train and augment existing staff as well as deploy with mobile assets.

- Re-evaluate decompression plans and clearly define mission, goals, and objectives.
    - Create a model template for decompression and surge.

4.18.0 Provide Medical Care

- Clearly define sheltering of special needs by re evaluating current plans and creating shelter guidelines and standard operating guidelines.
- Utilize Mass triage and patient tracking for appropriate care levels and tracing of patient flow.

- Development of teams for different acuity levels of MS residents will allow for a more robust system and ability to meet needs.
- Consider placing equipment cache with Regional Mass Sheltering Centers. Other considerations would include the addition of medical equipment cache placement with the development of hospital based medical assistance teams that can be mobilized as referenced in the Medical Surge Capacity Target Capability Associated Task List.
- Consider Memorandum of Understanding with commercial Pharmaceuticals to provide healthcare facility pharmacy provisions as well as continuity of residential prescription services.
- Develop firm protocols for the administration of Tetanus and other vaccines pre and post incidents of all types. This should be shared with healthcare facilities and EMS systems and written into individual facility plans. The recommendation would include the direct involvement of the PIO team for further dissemination to outside mutual aid resources in a disaster.
- Consider medical inventory tracking system to be integrated into State Medical Asset Tracking Tool (SMART) to also be integrated in with patient tracking as well.

4.19.0 Mass Prophylaxis

- Medications and vaccinations should be tracked by a statewide inventory management system. Further linkages with patient treatment and identification of vaccine recipient should be considered for potential interconnect with Federal Vaccine reaction database.
- Clearly define contents of prophylaxis cache for healthcare staff and families and select sites for storage. Pediatric dosages should be considered in the content development. Recommend site where rotation could occur with majority of pharmacy. Selection of cache placement sites should be mapped into a statewide GIS mapping system discussed prior.
- Identification of security for the Strategic National Stockpile and other state cache of medical supplies and pharmaceuticals. Include the roles and responsibilities of these security forces in the MS CEMP.

4.20.0 Mass Care (Special Needs)

- Consider splitting sheltering plan into response and recovery for catastrophic planning. Additional consideration should be given to discharge planning for shelters.
- Sheltering plan should include personnel. Consider utilizing medical assistance teams for response to provide shelter care. Sheltering personnel may be separated for specialty training related specifically to shelters. Add state animal response component discussed prior to provide care for pets. Personnel should be placed into statewide ESAR VHP database per Federal Specifications.
- Consider Regional Sheltering Centers for appropriate triage and treatment of the identified 7% of MS population identifying themselves as special needs.
- Clearly identify in MS CEMP differences in special needs and special medical needs.

- Discuss and define the differences in roles and responsibilities between ESF 6 and ESF 8.
- Provide clear chain of command for special needs shelter re supply. Develop and implement intensive statewide shelter training. Training should include statewide triage, treatment, discharge, and tracking of patients within the sheltering system

4.21.0 Fatality Management

- Consider development of State Mortuary Response Teams to include MS Bureau of Investigation, Bureau of Narcotics, and Crime Lab.
    - Sign Mutual Aid Agreement with relevant agencies to compose Mass Fatality Task Force and make all team members state assets during disasters.
    - Team training should include ICS 100, 200. 300. 700, 800 as baseline minimums.
    - Training and MS CEMP should both reflect integration with NDMS Disaster Mortuary Teams.
    - Include team members in state ESAR VHP database for deployment statewide.
    - Development of team should include county stakeholders.
    - Recruitment should include county based employees.
- Encourage MEMA to better define command and control for Fatality Management issues in reference to NRP and CEMP.
- Develop and cache of Fatality Management equipment and supplies and a deployment and logistical support plan.
- Development and implementation of state and or regional morgues for surge capacity.

APPENDIX A
Mississippi Department of Health
Katrina After Action Report
AAR Team Composition

AAR Team Composition

Organizations

North Carolina Department of Health and Human Services
University of North Carolina at Chapel Hill
North Carolina Office of the Chief Medical Examiner
North Carolina Division of Public Health
North Carolina Office of Emergency Medical Services
North Carolina Division of Emergency Management
North Carolina Public Health Regional Surveillance Teams
North Carolina Office of Public Health Preparedness and Response
Duke University Medical Center
New Hanover Regional Medical Center
Alamance County Health Department

Names

Mark Bennett
Ginger Bumby
Carl Carroll
Peter Costa
Mary Davis
Bill Furney
Dr. Maryanne Gaffney-Kraft
Danny Harbinson
Dr. Keith Henderson
Holli Hoffman
Kim Jacobs
Jim Morris
Andy Raby
Dr. Kim McDonald
Will Service
Larry Tucker

APPENDIX B
Mississippi Department of Health
Katrina After Action Report
Key Responder Interview Protocols

Key Responder Interview Protocol

Thank you for participating in this important activity today. You've been identified as a key responder and we'll need your input to help develop a Katrina After Action report for the state of Mississippi Department of Health. I'm _____ from _____ and I'll be conducting the interview today. MS has partnered with the NC Department of Health and Human Services to collect data and prepare the After Action Report.

I'll be asking you a variety of questions to help us understand what worked well and what needs to be done better to improve MDH preparation and response to future emergencies like Katrina. Your honesty is extremely important to us. I want you to know that all your responses are confidential and will be combined with the others, which means your specific responses cannot be traced back to you. The demographic questions that will be asked are purely for classification purposes and are being collected mainly to help me determine which questions are appropriate for you.

We're on a tight schedule today, so I'll have to ask you to focus your responses on the questions that I ask. We're looking for your insights into response areas where you have had direct experience. If you have other thoughts or concerns about MS response to Katrina, there will be a roundtable discussion this evening. You are welcome to attend this session and provide other insights.

DEMOGRAPHICS

1) Which of the following job **categories** BEST describes the role you perform in your daily job?
Public Health

□Nursing
□Clerical/Administration
□Health Director
□Environmental Health/Occupational Safety
□Social Work/Mental Health
□Allied Health Professional
□Health Education
□Nutrition
□Management/Policy Analysis
□Epidemiology
□Medical Director/Physician
□Laboratory
□Non-health Professional
□Other Public Health (Specify below)

Medical

□EMT/Paramedic
□Physician
□Nurse
□Laboratory
□Pharmacy
□Psychiatrist/Psychologist
□Respiratory Therapist
□Other Medical (Specify below)

2) What is your job or position title? (Please specify)

3) How long have you worked in this position?

□Less than 1 year
□1-2 years
□3-5 years
□6 or more years

4) What type of organization did you work in daily prior to the hurricane?

□District Health Department
□State Health Department
□Hospital
□Clinic
□EMS
□Private Agency/Private Practice
□Other (Please specify)

5) Where did you work during the Hurricane Katrina response?

□District Health Department
□State Health Department
□Local Hospital
□Local Shelter
□EMS - AMR
□EMS - AAA
□EMS - Arcadia
□Other (Please specify)

6) What was your job function during response and recovery operations?

□Command
□Operations
□Logistics
□Planning
□Finance
□Safety
□Medical Control
□Field Operations (Field Response)
□Other (Please specify)

Now I'd like to ask you some questions about MS response using the Federal Targeted Capabilities List. For each TCL, I will ask you if you had direct experience with this capability during Katrina response. Direct experience means that this TCL was part of your daily function or area of responsibility and that you have first hand knowledge of how this TCL was handled during Katrina response. If you have had direct experience, I will then ask you questions about that area. The interview will conclude with an opportunity for you to give us some feedback on your overall impression of the response.

Which of the following TCLs did you have direct experience with during Katrina Response?

1.1.0 Planning
5
1.2.0 Interoperable Communications (Communications and Information Management)
6
2.0.0 Information Sharing and Collaboration, Public Information
7
3.2.0 Critical Infrastructure Protection
8
3.3.0 Food and Agriculture Safety and Defense
9
3.4.0 Public Health Epidemiological Investigation and Laboratory Testing
10
3.5.0 Citizen Preparedness and Participation
12
4.0.0 On-Site Incident Management, Emergency Operations
13
4.2.0 Emergency Operations Center Management
14
4.3.0 Critical Resource Logistics and Distribution
15
4.4.0 Volunteer Management and Donations
16
4.5.0 Worker Health and Safety
17
4.7.0 Animal Health Emergency Support
18
4.8.0 Environmental Health and Vector Control
19
4.12.0 Citizen Protection: Evacuation and/or In-Place Protection
20
4.13.0 Isolation and Quarantine
21

1.1.0 Planning (Preparedness)

Please describe how preparedness plans were implemented during the emergency.

What worked well with the implementation of preparedness plans?

What did <u>not</u> work well for preparedness plan implementation?

What needs to be improved for preparedness plan implementation?

<u>PROMPTS</u>:

1.1.1 Were "all-hazards" plans successfully implemented during the emergency in accordance with the National Incident Management System (NIMS)?

1.1.2 Was risk analysis and risk management implemented for both deliberate and crisis action planning?

1.1.3 Were mutual aid agreements (MAAs) executed as planned?

1.1.4 Were personnel familiar with available MAA and MOUs (Memorandums of Understanding)?

1.2.0 Interoperable Communications (Communications and Information Management)

Please describe how interoperable communications worked, including the flow of critical information.

What worked well in interoperable communications?

What did not work well in interoperable communications?

What needs to be improved in interoperable communications?

PROMPTS: Did critical information flow without interruption?

1.2.1 Were sufficient back-up equipment and power sources available?

1.2.2 Were responders able to communicate with their counterparts in other jurisdictions and regions, as well as with State and Federal counterparts?

1.2.3 Were responders able to communicate across regional, State, and Federal agencies?

1.2.4 Were redundant communications equipment available and activated?

1.2.5 Were emergency response communication plans that were implemented incorporated into management structures in accordance with NIMS (National Incident Management System) & NRP (National Response Plan)?

1.2.9 Were common language and coordinated communication protocols implemented?

2.1.0 Information Sharing and Collaboration, Public Information

Please describe how hurricane threat information was disseminated and shared.

What worked well in the dissemination and sharing of hurricane threat information?

What did <u>not</u> work well in the dissemination and sharing of hurricane threat information?

What needs to be improved in the dissemination and sharing of hurricane threat information?

<u>PROMPTS</u>:

2.1.1 Was hurricane threat information disseminated to your health agency/facility/work place?
2.1.2 Were the proper stakeholders, contributors, and consumer incorporated into the information dissemination process?
2.1.3 Were protocols for information sharing and collaboration in place and used successfully?
2.1.4 Was this information prioritized, categorized, and disseminated according to national standards while maintaining confidentiality when necessary?
2.1.5 Was classified information handled properly?
2.1.6 Were agency Public Information Officers (PIO) identified and coordinated into a Joint Information Center (JIC)?
2.1.7 Did your agency have a predesignated PIO who was written into your Emergency Operations Plan (EOP)?

3.2.0 Critical Infrastructure Protection

Please describe how critical infrastructure was protected.

What worked well for the protection of critical infrastructure?

What did <u>not</u> work well for the protection of critical infrastructure?

What needs to be improved for the protection of critical infrastructure?

PROMPTS:

Were analytic risk management models incorporated into response planning at your workplace in order to assess and analyze any potential incidents and/or consequences that might arise post-hurricane, and identify probable treatment methods to reduce risk?

3.2.3 Were continuity of operations plans effectively implemented at your workplace for the protection of all identified key infrastructure elements and assets?

3.2.4 Were critical infrastructure threats recognized or identified in a timely manner?

3.2.7 Were protection and mitigation strategies identified in a timely manner?

3.2.9 Was vulnerability and risk analysis information revised as updated threat information was received?

3.2.11 Were all implemented protective measures sustainable

3.3.0 Food and Agriculture Safety and Defense (Safeguard Public Health)

Please describe what was done to ensure the safety of the food supply.

What worked well to ensure the safety of the food supply?

What did <u>not</u> work well to ensure the safety of the food supply?

What needs to be improved to ensure the safety of the food supply in the future?

<u>PROMPTS</u>:

3.3.1	Were food and agriculture safety and defense plans, policies, and procedures successfully implemented in accordance with NIMS (National Incident Management System)/NRP (National Response Plan)?
3.3.5	Were "trace-back" and contamination source identification measures implemented?
3.3.7/8	Were humans with exposure to or ingestion of contaminated food products readily identified?
3.3.12	Were risk communication efforts effective in providing timely & accurate information to the public regarding safety & handling of contaminated food products?

3.4.0 Public Health Epidemiological Investigation and Laboratory Testing (Safeguard Public Health)

EPIDEMIOLOGY

Please describe how epidemiological surveillance emergency plans were executed.

What worked well in epidemiological emergency plan implementation?

What did <u>not</u> work well in epidemiological emergency plan implementation?

What needs to be improved for epidemiological emergency plan implementation?

LABORATORY

Please describe how laboratory emergency plans were executed.

What worked well in laboratory emergency plan implementation?

What did <u>not</u> work well in laboratory emergency plan implementation?

What needs to be improved in **laboratory emergency plan implementation?**

<u>PROMPTS</u>:

3.4.1	Were epidemiological and laboratory emergency plans successfully implemented?
3.4.2	Were reportable diseases or syndromes of concern successfully recognized, diagnosed and properly reported?
3.4.3	Were suspicious symptoms reported to medical personnel?
3.4.4/5	Were outbreak cases, if any, adequately documented and reported in a timely fashion?
3.4.6	When needed, were alerts generated in a timely fashion?
3.4.8/10/11	Were laboratory specimens collected, handled, and analyzed correctly including maintaining a chain of evidence when necessary?

3.5.0 Citizen Preparedness and Participation (Prepare the Public)

Please describe what was done to prepare the public for the emergency.

What worked well for preparing the public for the emergency?

What did <u>not</u> work well to prepare the public for the emergency?

What could be done better to prepare the public for emergencies?

<u>PROMPTS</u>:

3.5.1/3	Was public information on personal preparedness and emergency plans distributed using multiple channels and venues?
3.5.7	Was information on personal preparedness and emergency plans for special needs or non-English speaking populations distributed using multiple channels and venues?
3.5.11	Was public information tailored to address special needs populations and cultural differences?

4.0.0 On-Site Incident Management, Emergency Operations (Manage Incident)

Please describe on-site incident management for Hurricane Katrina response.

What worked well for managing the incident on-site?

What did <u>not</u> work well managing the incident on-site?

How can on-site incident management be improved?

<u>PROMPTS</u>:

4.1.1 Were the incident action plans and procedures followed in accordance with NIMS (National Incident Management System) and NRP (National Response Plan)?
4.1.2 Was the incident command structure and/or unified command established in a timely fashion?
4.1.4 Was an Incident Action Plan (IAP) established?
4.1.5 Were all response activities coordinated through the incident commander?
4.1.6 Were there Standard Operating Procedures (SOP) for establishing an Area Command?
4.1.7 Was the need for Area Command identified?

4.2.0 Emergency Operations Center Management (Manage Incident)

Please describe how the Emergency Operations Center was used to help with incident management.

What worked well with the Emergency Operations Center?

What did <u>not</u> work well with the Emergency Operations Center?

How can the EOC (Emergency Operations Center) be improved to better manage incidents?

<u>PROMPTS</u>:

4.2.1 Did your jurisdiction activate your EOC?
4.2.2 Was there adequate time to staff the EOC?
4.2.3 Did your jurisdiction implement mutual aid?
4.2.4 Did your jurisdiction produce and Incident Action Plan?
4.2.5 Did your jurisdiction set a realistic schedule for Incident Action Planning?
4.2.6 Did your agency produce an Incident Action Plan in an adequate amount of time?
4.2.7 Did your jurisdiction produce a Situation Report?
4.2.8 Did your jurisdiction set a realistic schedule for Situation Reporting activities?
4.2.9 Were Situation Reports produced in appropriate intervals?
4.2.10 Did your jurisdiction request State and Federal resources?
4.2.11 Were continuity of Operations Plans successfully implemented?
4.2.12 Did personnel within the EOC have adequate and appropriate training for an incident of this size?
4.2.13 Did your agencies ESF plans match State EOP?
4.2.14 Did the EOC have the ability to expand operations?

4.3.0 Critical Resource Logistics and Distribution (Manage Incident)

Please describe the logistics of critical resources distribution.

What worked well with critical resource logistics and distribution?

What did <u>not</u> work well with critical resource logistics and distribution?

How can critical resource logistics and distribution be improved?

<u>PROMPTS</u>:

4.3.1 Were resource and logistics plans, policies, and procedures successfully implemented in accordance with NIMS and NRP?
4.3.2 Were resource and logistics plans followed?
4.3.3 Were resource requests met (including funding)?
4.3.4 Were resource requests accurately completed?
4.3.5 Was there adequate time to process funding requests?
4.3.6 Was the time between requests for resources and delivery of resources appropriate?
4.3.7 Did delivered requests of supplies and materials exceed warehouse capacity?
4.3.8 Were refueling and maintenance services effectively provided?
4.3.9 Did the type of stockpiled resources meet response requirements?
4.3.9 Were stockpiled resources utilized to meet response requirements?
4.3.10 Did the type of contracted resources meet response requirements?
4.3.10 Were contracted resources utilized to meet response requirements?
4.3.11 Were supplies provided to command staff adequate to sustain an operation of this size?

4.4.0 Volunteer Management and Donations (Manage Incident)

Please describe how volunteers and donations were managed.

What worked well with volunteer and donation management?

What did <u>not</u> work well with volunteer and donation management?

What needs to be improved with volunteer and donation management?

<u>PROMPTS</u>:

4.4.1 Were volunteer management and donations plans successfully implemented?
4.4.1a Was public information on volunteer reception areas and donation centers distributed using multiple channels and venues?
4.4.2 Were volunteers and donations managed and coordinated properly (staffing, tracking, donation distribution)?
4.4.3 Was there adequate time to establish and fully staff donations coordination centers?
4.4.4 Was there adequate time to establish and fully staff distribution centers?
4.4.6 Were warehousing locations and facilities established and appropriately staffed?
4.4.7 Was a volunteer phone bank and/or volunteer reception center established?
4.4.8 Was volunteer credentialing performed (Specifically Medical Volunteers)?

4.5.0 Worker Health and Safety (Manage Incident)

Please describe how worker health and safety were maintained.

What worked well with worker health and safety management?

What did <u>not</u> work well with worker health and safety management?

How can worker health and safety be improved in the future?

<u>PROMPTS</u>:

4.5.1/2	Was a medical unit and/or safety officer established under the incident command system in which you operated?
4.5.1	Was necessary personal protective equipment (PPE) made available?
4.5.3	Did personnel wear the required personal protective equipment (PPE) for site entry and work?
4.5.4	Were workers who had been exposed to hazardous substances quantified and recorded?
4.5.5/9	Did support services, including Mental Health, treat injured or ill personnel?
4.5.6	Were personnel adequately decontaminated, if indicated?
4.5.7	Were first responders served by support services, including Mental Health?
4.5.10	Did your agency have a method of accountability for personnel both pre and post disaster?
4.5.11	Were employees in the affected area provided a method of reporting to work?

4.7.0 Animal Health Emergency Support (Respond to Hazard)

Please describe how emergency animal health issues were managed.

What worked well with animal health emergency support?

What did <u>not</u> work well animal health emergency support?

What needs to be done to improve emergency support for animal health?

<u>PROMPTS</u>:

4.7.2	Were sufficient field staff (to include veterinarians, animal health technicians, disease specialists, and veterinary diagnostic labs) available to manage animal health issues?
4.7.5	Were animals appropriately euthanized or disposed of for disease control purposes?
4.7.6	Were any humans with primary exposure to animals exhibiting clinical signs of disease documented and tracked?
4.7.8/11	Were primary and secondary human exposures to animals exhibiting clinical signs of disease identified in a timely fashion?
4.7.13	Were animal health emergency support plans successfully implemented in accordance with NIMS (National Incident Management Plan)/NRP (National Response Plan)?
4.7.14	Were risk communications provided through multiple venues to address animal health issues?
4.7.14	Were risk communication efforts effective in maintaining public confidence?

4.8.0 Environmental Health and Vector Control (Respond to Hazard)

Please describe how environmental health and vector control concerns were addressed.

What worked well for addressing environmental health and vector control concerns?

What did not work well for addressing environmental health and vector control concerns?

What needs to be improved for addressing environmental health and vector control concerns?

PROMPTS:

4.8.1/3	Were environmental health risk management messages effectively communicated to the public?
4.8.2/6	Were vector control plans (ground and aerial) successfully implemented?
4.8.5	Were systems in place to rapidly inspect on-site water supply and waste water disposal systems to bring those systems back into operation?
4.8.a.	Were systems in place for rapid inspection of food handling establishments to re-open those facilities?
4.8.b.	Were systems in place for rapid inspection of temporary/emergency food handling operations?
4.8.c.	Was public information made available through multiple channels and venues to address environmental health and vector control concerns?

4.12.0 Citizen Protection: Evacuation and/or In-Place Protection (Implement Protective Actions)

Please describe how evacuation and in-place shelter procedures were implemented

What worked well with the evacuation and shelter procedure implementation?

What did not work well with the evacuation and shelter procedure implementation?

How can the evacuation and shelter procedures be better implemented in the future?

PROMPTS:

4.12.1/10/11	Was public information and shelter-in-place procedures made available throughout the incident through multiple channels?
4.12.2	Was there adequate time to evacuate the affected general population?
4.12.3	Was there adequate time to evacuate special needs populations?
4.12.4	Were traffic and transportation plans implemented?
4.12.5	Was the affected general population successfully evacuated?
4.12.6	Were special needs populations successfully evacuated?
4.12.7	Were homeless populations identified?
4.12.9	Was coordination with surrounding jurisdictions implemented to ensure adequate locations and facilities for receiving evacuees?
4.12.10	Was the public accurately notified of shelter-in-place strategy (locations identified, duration of shelter, steps to take, etc.)?
4.12.11	Was there adequate time to notify affected population of shelter-in-place strategy?

4.13.0 Isolation and Quarantine

Please describe how isolation and quarantines were accomplished.

What worked well with isolation and quarantines?

What did <u>not</u> work well with isolation and quarantines?

What needs to be improved with isolation and quarantines?

<u>PROMPTS</u>:

4.13.0	Were isolation and quarantine plans successfully implemented?
4.13.1	Was the necessary legal authority for declaration of quarantine and/or isolation measures identified?
4.13.5/7/8	Were understandable and effective isolation and quarantine and/or isolation messages delivered to the public in multiple languages if necessary?
4.13.9	Was a plan to handle logistics for quarantines and isolated individuals developed and/or implemented?
4.13.10	Was a plan to deal with violations of isolations and quarantine orders implemented?

4.16.0 Triage and Pre-Hospital Treatment (Provide Medical Care)

Please describe how triage and pre-hospital treatment functioned.

What worked well with triage and pre-hospital care?

What did <u>not</u> work well with triage and pre-hospital care?

What needs to be improved with triage and pre-hospital care?

<u>PROMPTS</u>:

4.16.1	Were triage and pre-hospital treatment plans successfully implemented?
4.16.2	Were triage and pre-hospital patients successfully tracked?
4.16.3	Was personal protective equipment (PPE) available to first responders and medical response personnel?
4.16.4	Was the ability to track where patients were transported available?
4.16.5	Did any patients require decontamination?
4.16.6	Were patients appropriately triaged?
4.16.7	Did triaged patients require re-triaging?
4.16.9	Was triaging completed in an adequate amount of time?
4.16.10	Was patient stabilization completed in an adequate amount of time?
4.16.11	Were mutual aid and inter-facility ambulances utilized as needed?
4.16.12	Did communication interoperability exist for all responders?
4.16.13	Was evacuation and patient re-location implemented using ambulances?
4.16.14	Was the evacuation or relocation of patients effective?

4.17.0 Medical Surge (Provide Medical Care)

Please describe how surge medical care worked.

What worked well with surge medical care?

What did <u>not</u> work well with surge medical care?

How could the provision of surge medical care have been improved?

<u>PROMPTS</u>:

4.17.3	Personnel demonstrated competencies defined by their given healthcare professions to address diagnosis, treatment, and reporting?
4.17.4	Was the number of available personnel adequate to augment medical treatment facilities?
4.17.5	Was the available number of beds adequate for various casualty categories (e.g. ICU, PEDs, general, burn)?
4.17.6	Was the number of alternate care centers established adequate?
4.17.7	Were the amount of supplies, pharmaceuticals, and equipment adequate to effectively support a facility's reported surge capacity?
4.17.8	Were patients successfully tracked?
4.17.9	Was PPE available to staff for the surge of patients encountered?
4.17.11	Was the number of functional hospitals available adequate to support the incident?
4.17.12	Did medical facilities have a plan for evacuation or decompression?
4.17.13	Were evacuation or decompression plans effective?
4.17.14	Was the standard of care able to be maintained during the event?

4.18.0 Medical Supplies Management and Distribution (Provide Medical Care)

Please describe how medical supplies were managed and distributed.

What worked well for medical supplies management and distribution?

What did <u>not</u> work well for medical supplies management and distribution?

How can medical supply management and distribution be improved?

<u>PROMPTS</u>:

4.18.2 Was the time from the assessment of shortfalls to requests for needed supplies minimized (SNS)?
4.18.3 Was the time from request to arrival of needed supplies minimal?
4.18.5 Were special needs populations requirement successfully met?
4.18.6 Did the security provided meet the needs of the situation?
4.18.9 Were state or regional assets or resources adequately relocated to support incidents?

4.26.0 Receipt and Management of Strategic National Stockpile (SNS) and Vendor Managed Inventory (VMI)

Please describe how receipt and management of the SNS and VMI worked

What worked well with receipt and management of the SNS and VMI?

What did <u>not</u> work well with receipt and management of SNS and VMI?

What needs to be improved with receipt and management of SNS and VMI?

<u>PROMPTS</u>:

4.19.1 Were plans for receipt, management and distribution of the SNS and VMI successfully implemented?

4.19.2 Were mass prophylaxis and vaccination plans successfully implemented?

4.19.3 Was accurate and timely public information made available through multiple channels and venues regarding the location of these sites?

4.19.4 Were sufficient competent personnel available to staff dispensing centers and vaccination sites?

4.19.6 Was a separate prophylaxis-dispensing site designated for responders and their families?

4.20.0 Mass Care (Sheltering, Feeding, and Related Services) (Provide Mass Care)

Please describe how mass care – which involved services like sheltering and feeding – worked.

What worked well with mass care?

What did <u>not</u> work well with mass care?

What needs to be improved with mass care?

<u>PROMPTS</u>:

4.20.1/4/6	Did all shelter residents (including special needs) transition from shelter back to original home facility, alternative accommodations and/or interim housing prior to shelter closure?
4.20.4	Was public information regarding mass care (sheltering, feeding, & related services) made available throughout the incident through multiple channels and venues?
4.20.5	Was the special needs shelter plan successfully implemented?
4.20.7	Was a pet care/handling plan implemented for sheltering of pets?

4.21.0 Fatality Management (Manage Fatalities)

Please describe how fatalities were managed. What worked well with fatality management?

What did <u>not</u> work well with fatality management?

How can fatality management be improved?

<u>PROMPTS (Note there are more prompts on the next page)</u>:

4.21.1	Were victims families contacted?
4.21.2	Were victims able to be identified?
4.21.3	Were DMORT (Disaster Mortuary Operations Response Team) resources available?
4.21.3	Were DMORT (Disaster Mortuary Operations Response Team) resources requested?
4.21.5	Was the DMORT response adequate and proactive?
4.21.6	Was coordination between medical examiner/coroner and public safety personnel established?
4.21.7	Were personal effects and evidence correctly managed?
4.21.8	Were remains handled appropriately?
4.21.9/15	Were remains properly and effectively decontaminated?
4.21.10	Were provisions for notification to the chief medical examiner followed?
4.21.12	Were locations for a temporary morgue near incident site(s) identified?
4.21.13	Was sufficient personal protective equipment (PPE) available to protect workers involved in decontamination, identification, post mortem examination, disposition, etc. of human remains?
4.21.14	Was a plan for temporary storage of remains activated?
4.21.16	Was coordination between the medical examiner(s) and emergency operations center (EOC) established?
4.21.17	Was the State Medical Examiners (ME) office included in the emergency operation center?
4.21.18	Was the ME office consulted and included in all fatality management efforts?
4.21.19	Was a victim search and recovery plan established and utilized?
4.21.20	Was a victim labeling system established and utilized during search and recovery efforts?
4.21.21	Were adequate personnel available for search and recovery efforts?
4.21.22	Were victim collection points established for temporary storage of victims awaiting transport to the morgue facility?
4.21.23	Was a system established for transportation of recovered victims to the morgue facility?
4.21.24	Were a sufficient number of refrigerated trucks available for storage and transportation of victims to the morgue facility?

4.21.25	Was a system established with the medical facilities/triage areas to ensure all hurricane-related deaths (including delayed deaths) were reported to the ME Office?
4.21.26	Was an ME protocol established regarding handling of medical facility hurricane-elated deaths?
4.21.27	Were collection points established at medical facilities/triage areas for storage of all hurricane-related victims prior to their transport to the ME facility if needed per protocol?
4.21.28	Was a Family Assistance Center (FAC) established?
4.21.29	Was a representative of the Medial Examiners office assigned to the FAC?
4.21.30	Was a Family Victim Identification Center established for collection of ante-mortem identification information?
4.21.31	Was an autopsy protocol established for the victims?
4.21.32	Did the autopsy protocol include handling of body part and tissue fragments?
4.21.33	Was a death certificate protocol established addressing uniformity and standardization of terminology of all victims?
4.21.34	Was a fatality data collection system established to ensure proper documentation of victims ID information, personal effects, examination, toxicology, cause and manner, etc. of death and disposition prior to release of the victim?
4.21.35	Was a record of disaster related obligations, work hours and expenditures maintained?
4.21.36	Was a system established for the handling of non-hurricane related Medical Examiner deaths?

INTERVIEW CLOSEOUT

We've covered all of the Targeted Capabilities List areas. Is there anything else you would like to say that could improve Mississippi's preparation and response capabilities for public health and medical targeted capabilities?

Do you have any questions for me? Do you have any questions for MS DOH?

Thank you very much for your participation and thoughtful responses.

APPENDIX C
Mississippi Department of Health
Katrina After Action Report
On-line Survey Results

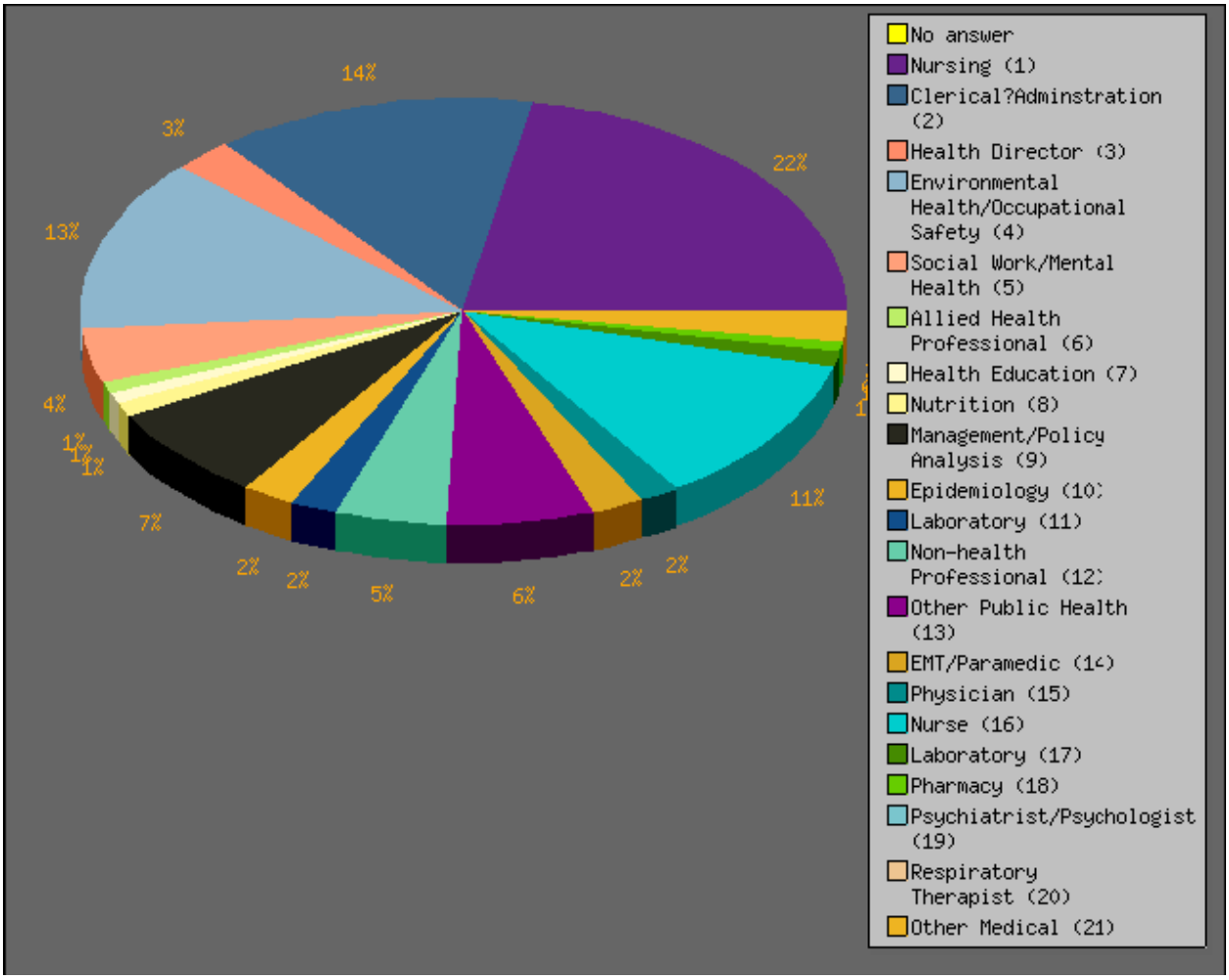
Mississippi Department of Health
Katrina After Action Report
On-line Survey Draft Results
(n = 359)

Data tables include job background information, job location and function for Hurricane Katrina response and feedback from Target Capabilities List performance measures. Tables where less than 70% of respondents indicated that a performance measure was met were flagged with ******** just before the table. Respondents may have indicated that no a performance measure was not met or that whether it was met was unknown. For a number of tables 25-50% of respondents indicated that it was unknown as to whether a performance measure was met. Respondents may have chosen this because of the following reasons:

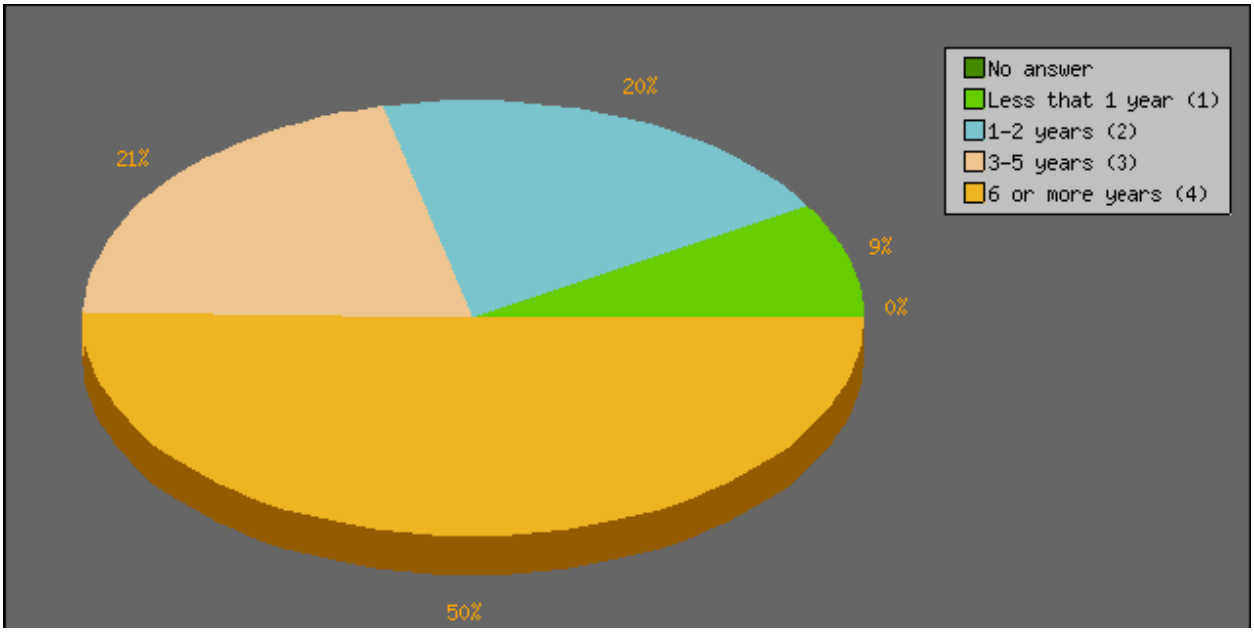
- They truly did not know if the measure was met: indicating that information was not available to the respondent
- The respondent didn't know enough about the performance measure to judge if it was met, indicating a lack of training or a poorly written performance measure
- The respondent chose this response rather than indicating a "no" response.

Field Summary for 1:		
Which of the following job categories best describes the role you perform in your daily job?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Nursing (1)	79	22.01%
Clerical/Administration (2)	49	13.65%
Health Director (3)	9	2.51%
Environmental Health/Occupational Safety (4)	47	13.09%
Social Work/Mental Health (5)	15	4.18%
Allied Health Professional (6)	3	0.84%
Health Education (7)	3	0.84%
Nutrition (8)	4	1.11%
Management/Policy Analysis (9)	26	7.24%
Epidemiology (10)	8	2.23%
Laboratory (11)	7	1.95%
Non-health Professional (12)	17	4.74%
Other Public Health (13)	22	6.13%
EMT/Paramedic (14)	8	2.23%
Physician (15)	6	1.67%
Nurse (16)	41	11.42%

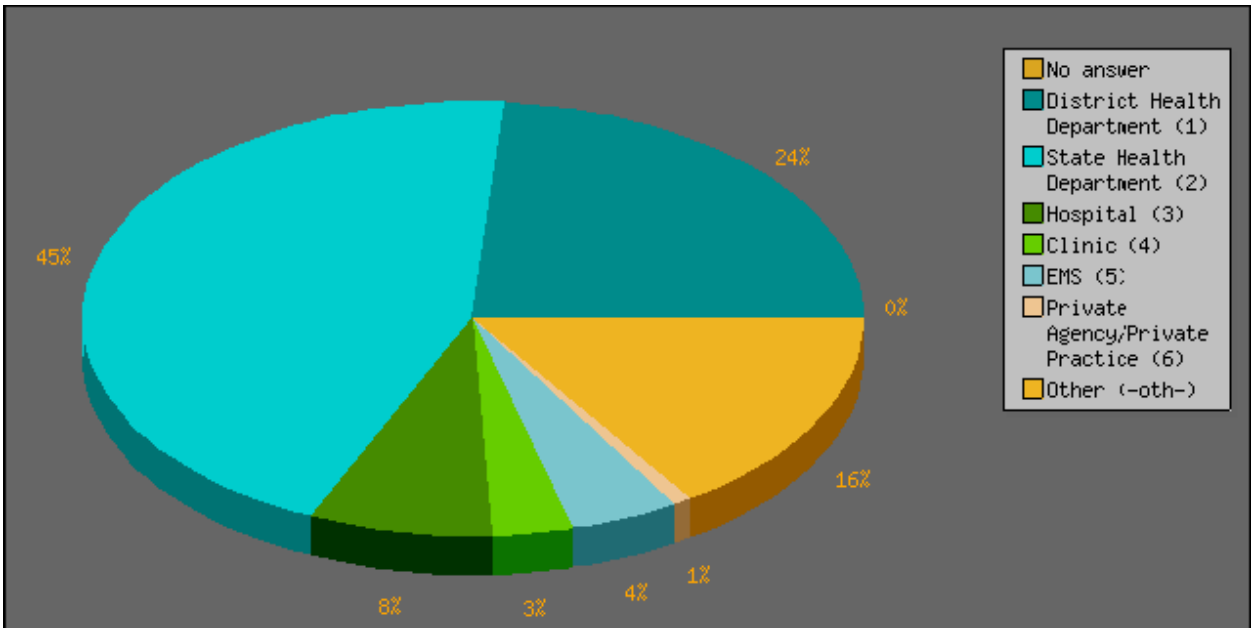
Laboratory (17)	4	1.11%
Pharmacy (18)	3	0.84%
Psychiatrist/Psychologist (19)	0	0.00%
Respiratory Therapist (20)	0	0.00%
Other Medical (21)	8	2.23%



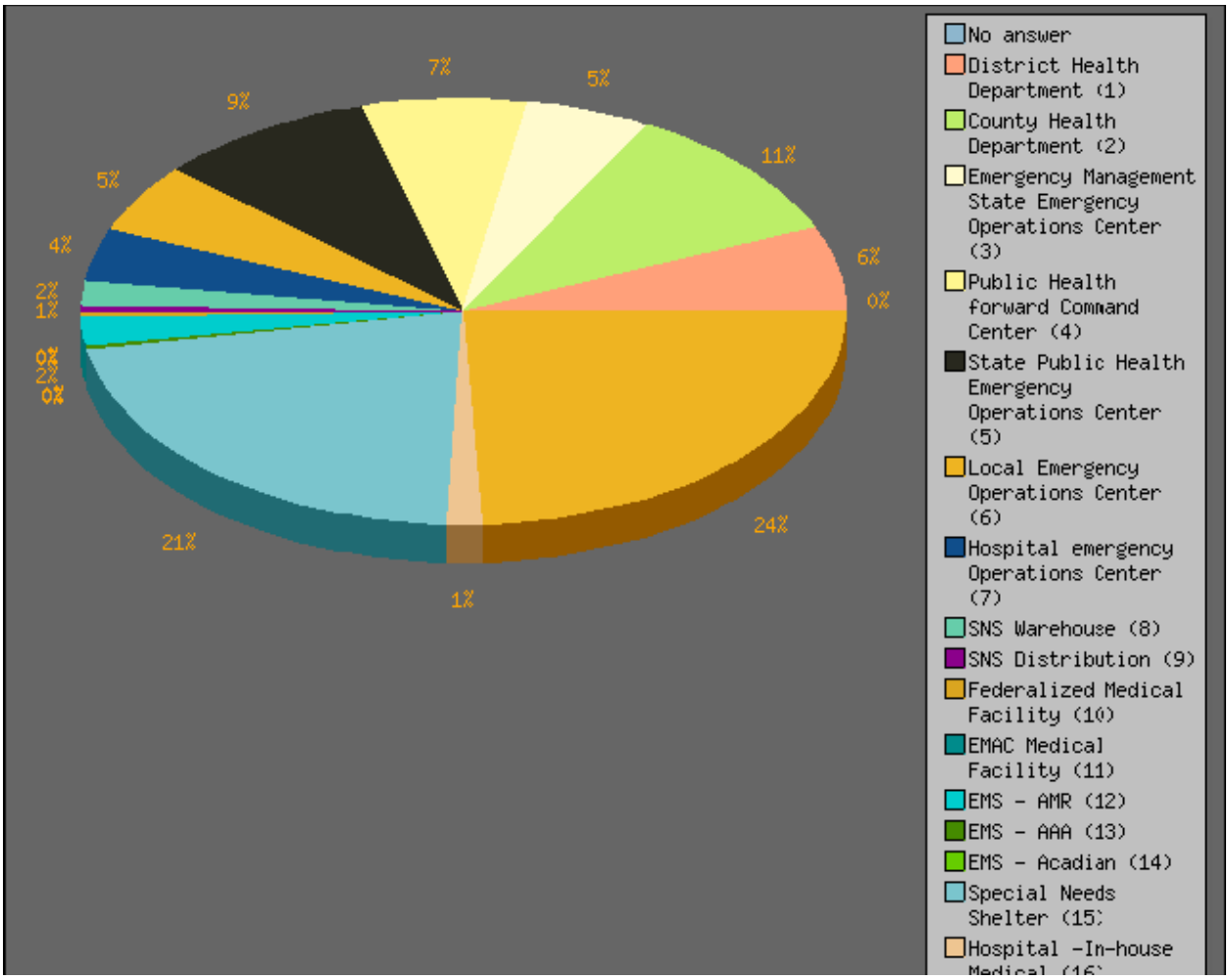
Field Summary for 3:		
How long have you worked in this position?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Less that 1 year (1)	31	8.64%
1-2 years (2)	72	20.06%
3-5 years (3)	75	20.89%
6 or more years (4)	181	50.42%



Field Summary for 4:		
What type of organization did you work in daily prior to the hurricane?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
District Health Department (1)	85	23.68%
State Health Department (2)	160	44.57%
Hospital (3)	27	7.52%
Clinic (4)	12	3.34%
EMS (5)	16	4.46%
Private Agency/Private Practice (6)	3	0.84%
Other (-oth-)	56	15.60%



Field Summary for 5:		
Where did you work during the Hurricane Katrina response?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
District Health Department (1)	23	6.41%
County Health Department (2)	38	10.58%
Emergency Management State Emergency Operations Center (3)	19	5.29%
Public Health forward Command Center (4)	25	6.96%
State Public Health Emergency Operations Center (5)	33	9.19%
Local Emergency Operations Center (6)	19	5.29%
Hospital emergency Operations Center (7)	14	3.90%
SNS Warehouse (8)	7	1.95%
SNS Distribution (9)	2	0.56%
Federalized Medical Facility (10)	1	0.28%
EMAC Medical Facility (11)	0	0.00%
EMS - AMR (12)	8	2.23%
EMS - AAA (13)	1	0.28%
EMS - Acadian (14)	0	0.00%
Special Needs Shelter (15)	77	21.45%
Hospital -In-house Medical (16)	5	1.39%
Other (-oth-)	87	24.23%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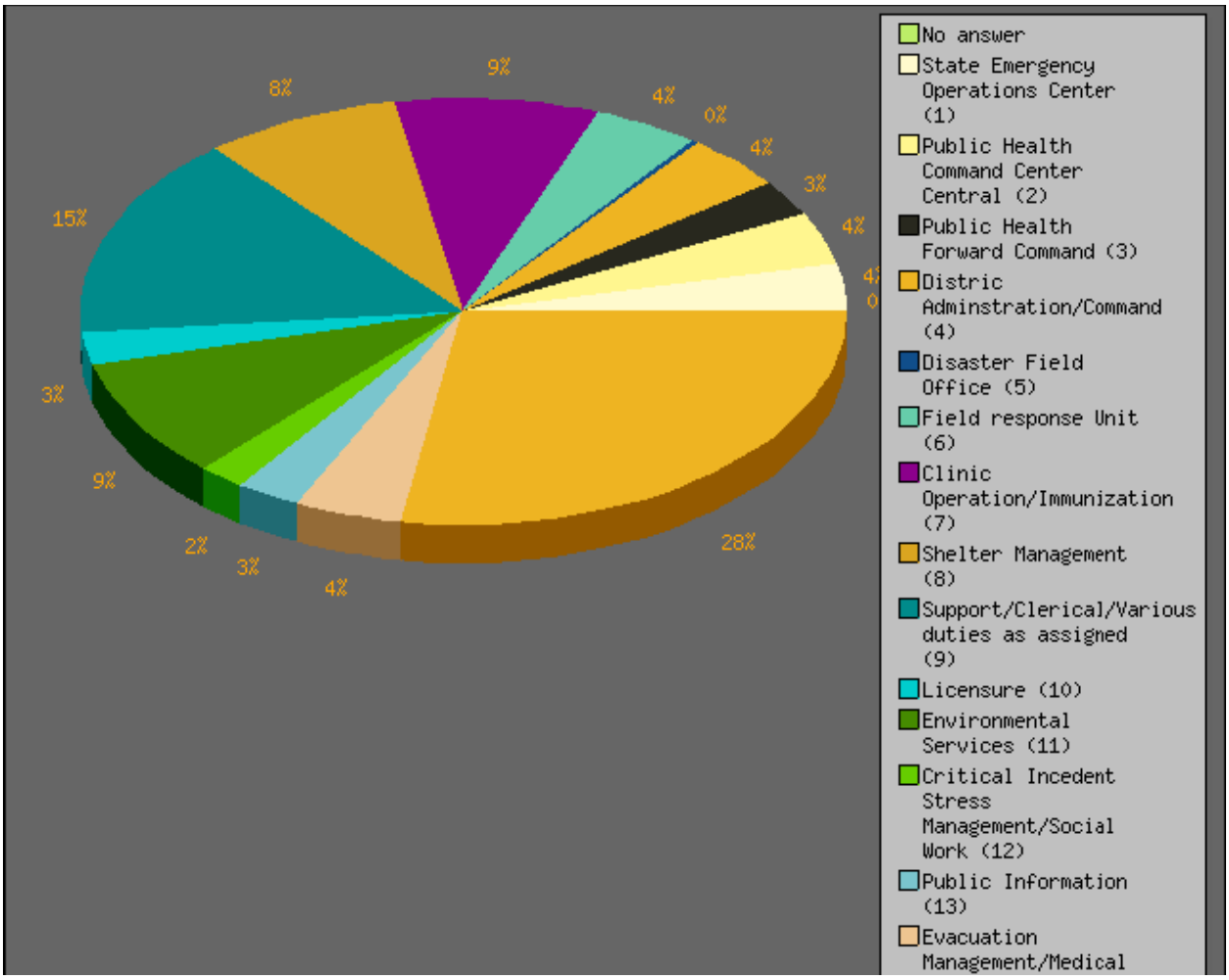
No answer
District Health Department (1)
County Health Department (2)
Emergency Management State Emergency Operations Center (3)
Public Health forward Command Center (4)
State Public Health Emergency Operations Center (5)
Local Emergency Operations Center (6)
Hospital emergency Operations Center (7)
SNS Warehouse (8)
SNS Distribution (9)
Federalized Medical Facility (10)
EMAC Medical Facility (11)
EMS - AMR (12)
EMS - AAA (13)
EMS - Acadian (14)
Special Needs Shelter (15)
Hospital -In-house

Field Summary for 6:		
What was your job function during response and recovery operations?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
State Emergency Operations Center (1)	13	3.62%
Public Health Command Center Central (2)	14	3.90%
Public Health Forward Command (3)	10	2.79%
District Administration/Command (4)	15	4.18%
Disaster Field Office (5)	1	0.28%
Field response Unit (6)	16	4.46%
Clinic Operation/Immunization (7)	31	8.64%
Shelter Management (8)	30	8.36%
Support/Clerical/Various duties as assigned (9)	55	15.32%
Licensure (10)	9	2.51%
Environmental Services (11)	33	9.19%
Critical Incident Stress Management/Social Work (12)	7	1.95%
Public Information (13)	10	2.79%
Evacuation Management/Medical Transportation/EMS (14)	16	4.46%
Other (-oth-)	99	27.58%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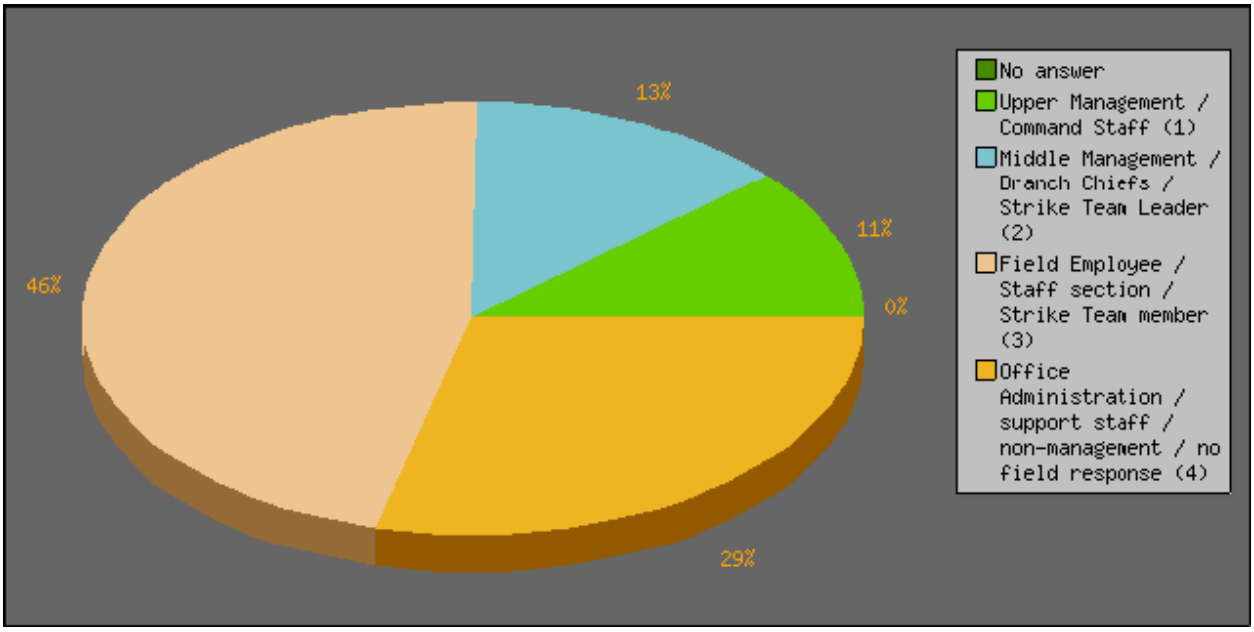
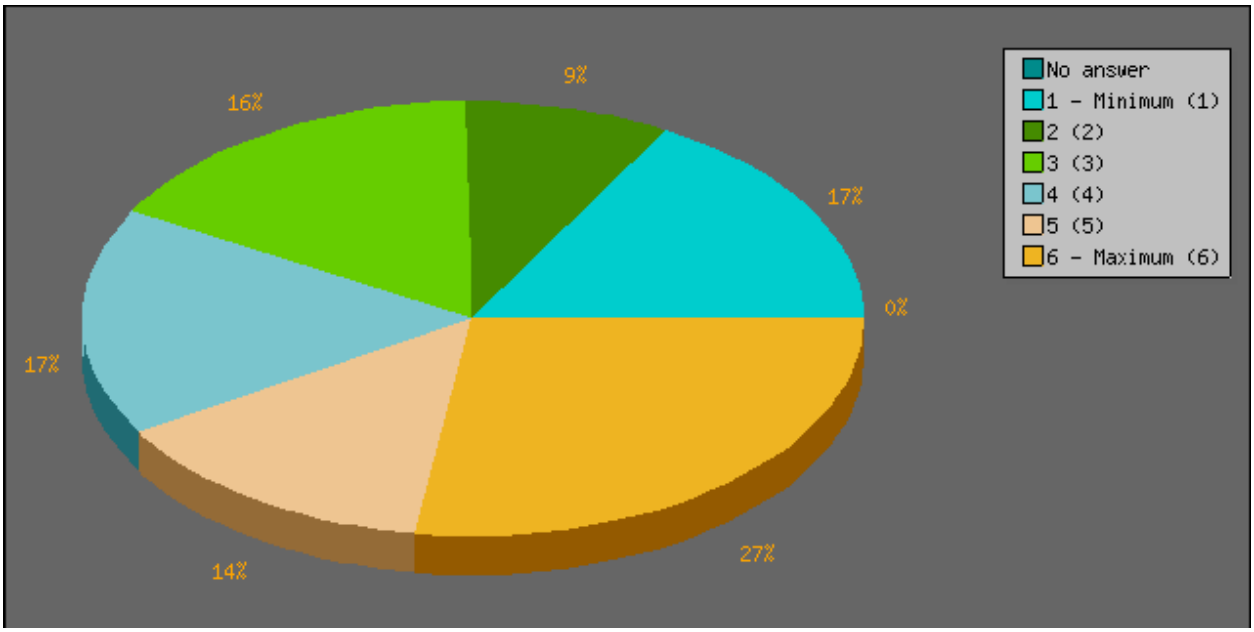
No answer
State Emergency Operations Center (1)
Public Health Command Center Central (2)
Public Health Forward Command (3)
Distric Adminstration/Command (4)
Disaster Field Office (5)
Field response Unit (6)
Clinic Operation/Immunization (7)
Shelter Management (8)
Support/Clerical/Various duties as assigned (9)
Licensure (10)
Environmental Services (11)
Critical Incedent Stress Management/Social Work (12)
Public Information (13)
Evacuation Management/Medical

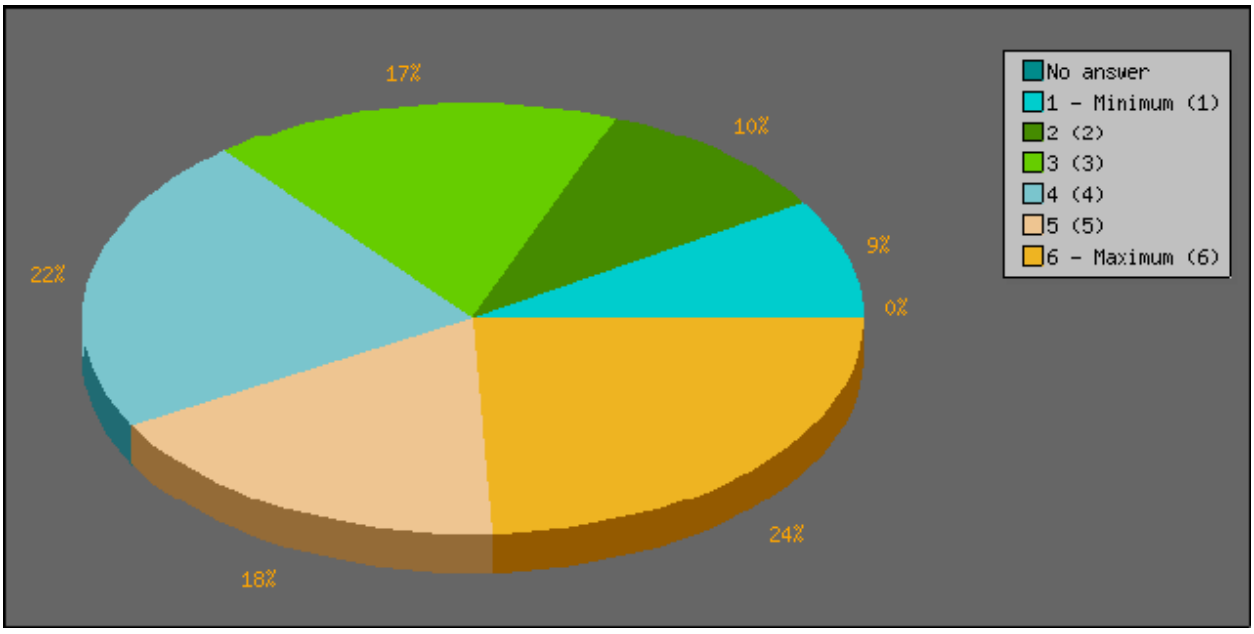
Field Summary for 7:		
During Hurricane Katrina response, what was your assigned position level?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Upper Management / Command Staff (1)	41	11.42%
Middle Management / Branch Chiefs / Strike Team Leader (2)	48	13.37%
Field Employee / Staff section / Strike Team member (3)	166	46.24%
Office Administration / support staff / non-management / no field response (4)	104	28.97%



Field Summary for 8:		
For your assigned job function during Katrina response, how much experience did you have for this position?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
1 - Minimum (1)	60	16.71%
2 (2)	31	8.64%
3 (3)	59	16.43%
4 (4)	61	16.99%
5 (5)	50	13.93%
6 - Maximum (6)	98	27.30%



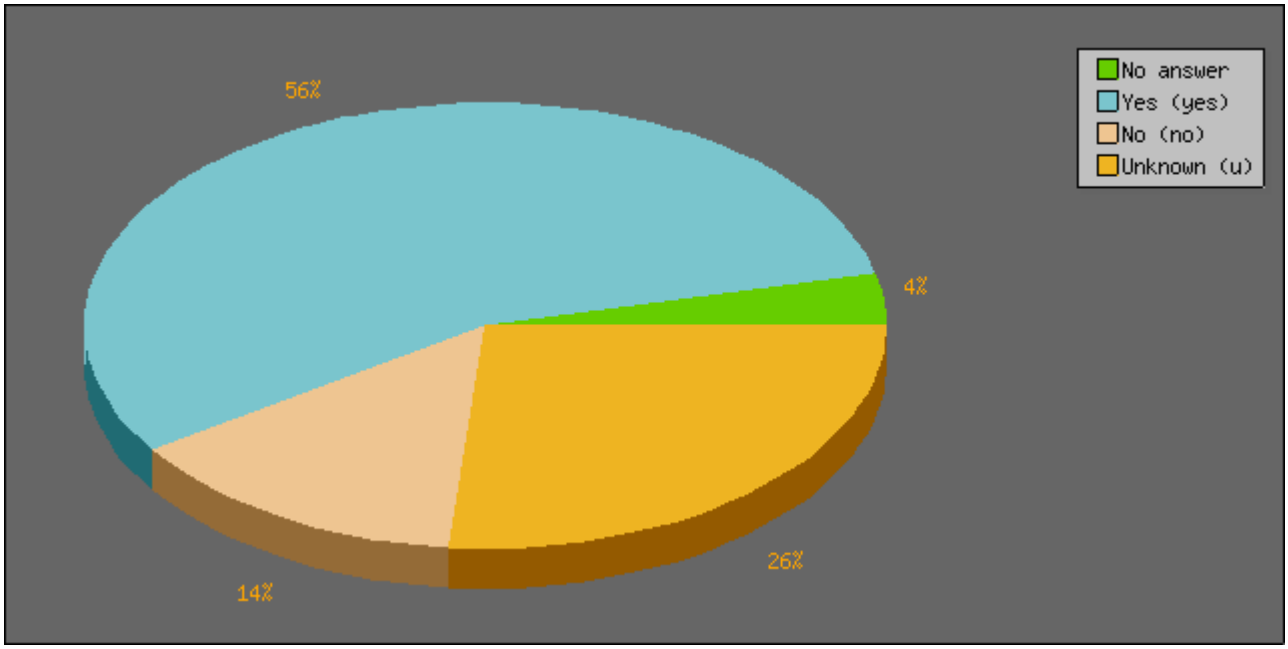
Field Summary for 9:		
How well prepared were you for the tasks you were assigned during Hurricane Katrina response?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
1 - Minimum (1)	32	8.91%
2 (2)	36	10.03%
3 (3)	61	16.99%
4 (4)	80	22.28%
5 (5)	63	17.55%
6 - Maximum (6)	87	24.23%



Field Summary for 1.1.0:		
Were you part of Planning (Preparedness)?		
Answer	Count	Percentage
No answer	0	0.00%
Yes (Y)	106	100.00%
No (N)	0	0.00%

****

Field Summary for 1.1.1:		
Were “all-hazards” plans successfully implemented during the emergency in accordance with the National Incident Management System (NIMS)?		
Answer	Count	Percentage
No answer	4	3.77%
Yes (yes)	59	55.66%
No (no)	15	14.15%
Unknown (u)	28	26.42%



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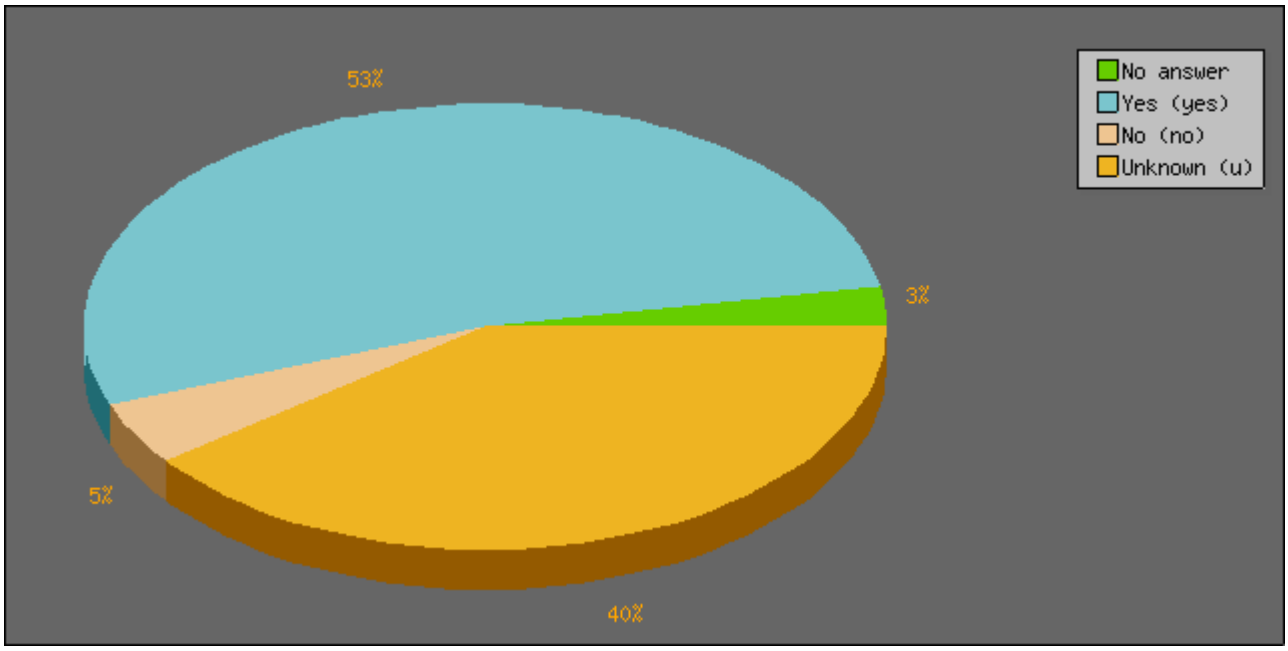
Field Summary for 1.1.2:		
Was risk analysis and risk management implemented for both deliberate and crisis action planning?		
Answer	**Count**	**Percentage**
No answer	3	2.83%
Yes (yes)	56	52.83%
No (no)	5	4.72%
Unknown (u)	42	39.62%



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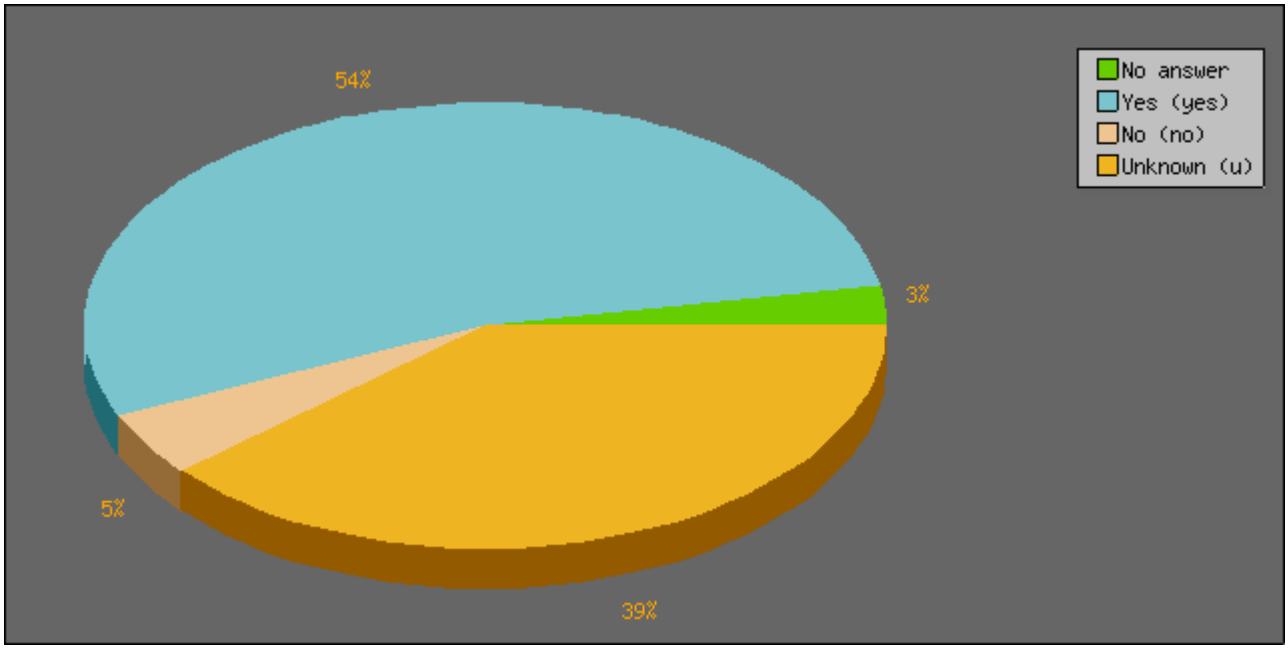
Field Summary for 1.1.3:		
Were mutual aid agreements (MAAs) executed as planned?		
Answer	Count	Percentage
No answer	3	2.83%
Yes (yes)	57	53.77%
No (no)	5	4.72%
Unknown (u)	41	38.68%



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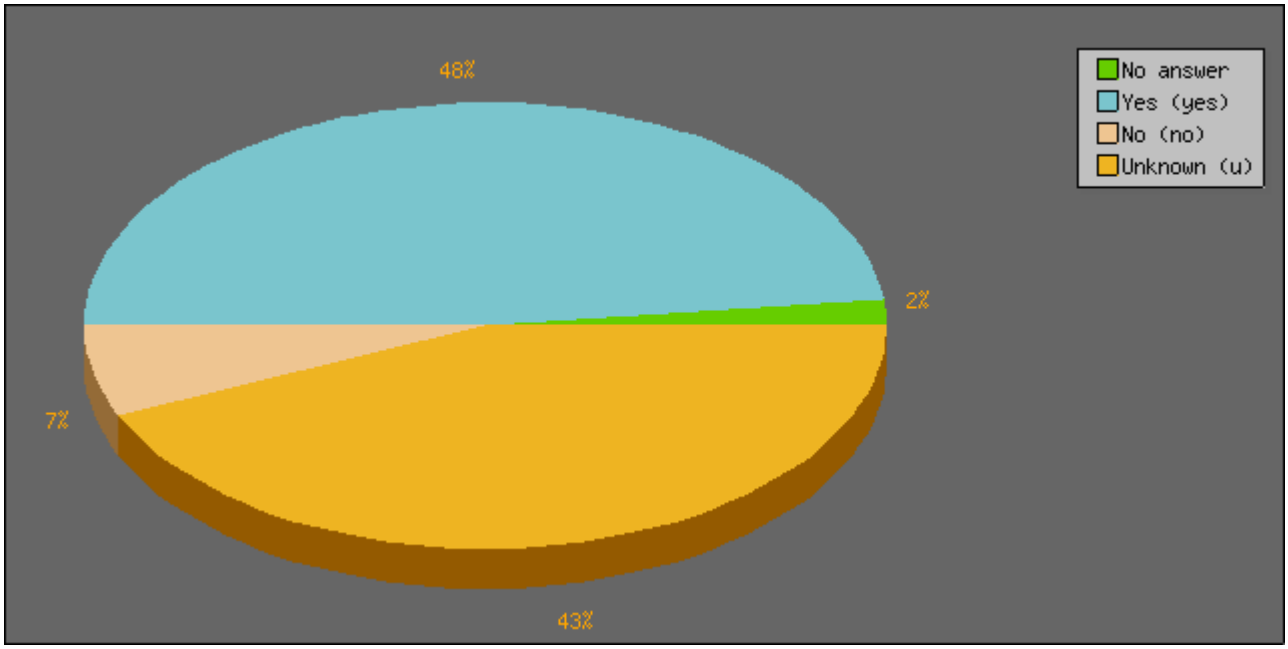
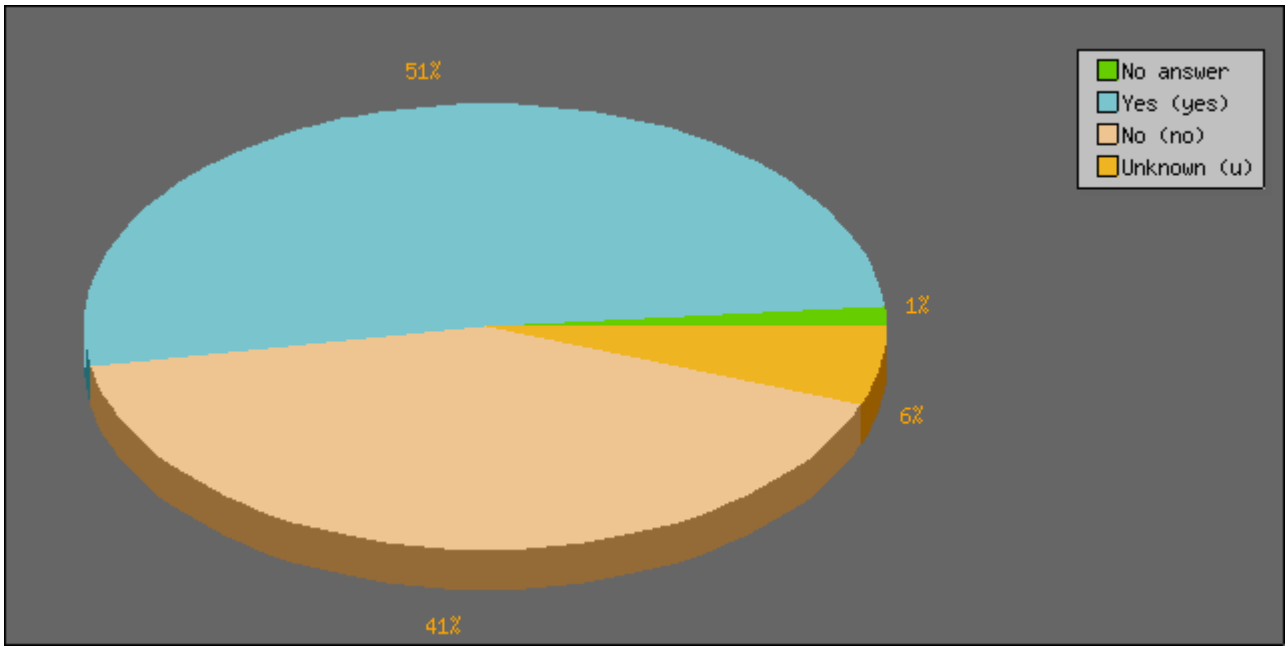
Field Summary for 1.1.4:		
Were personnel familiar with available MAA and MOUs?		
Answer	**Count**	**Percentage**
No answer	2	1.89%
Yes (yes)	51	48.11%
No (no)	7	6.60%
Unknown (u)	46	43.40%



Field Summary for 1.2.0		
Were you a part of Interoperable Communications (Communications and Information Management)?		
Answer	Count	Percentage
No answer	0	0.00%
Yes (Y)	70	100.00%
No (N)	0	0.00%

****

Field Summary for 1.2.2:		
Were sufficient back-up equipment and power sources available?		
Answer	Count	Percentage
No answer	1	1.43%
Yes (yes)	36	51.43%
No (no)	29	41.43%
Unknown (u)	4	5.71%



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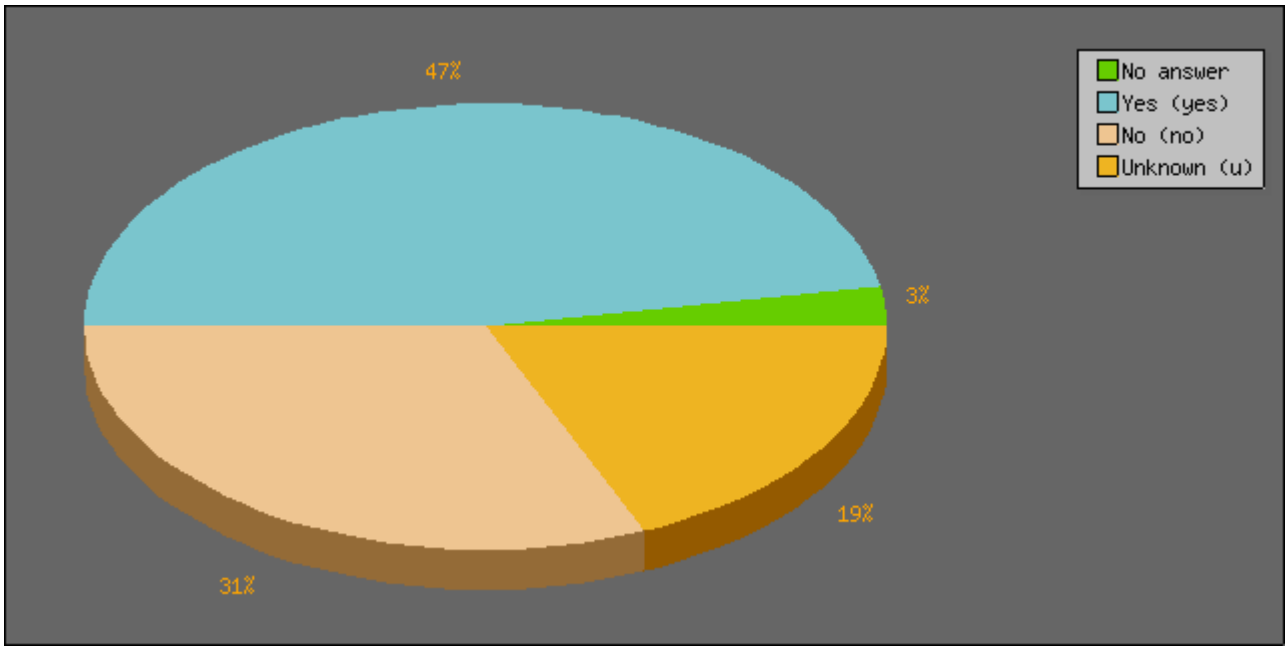
Field Summary for 1.2.3:		
Were responders able to communicate with counterparts in other jurisdictions?		
Answer	**Count**	**Percentage**
No answer	2	2.86%
Yes (yes)	33	47.14%
No (no)	22	31.43%
Unknown (u)	13	18.57%



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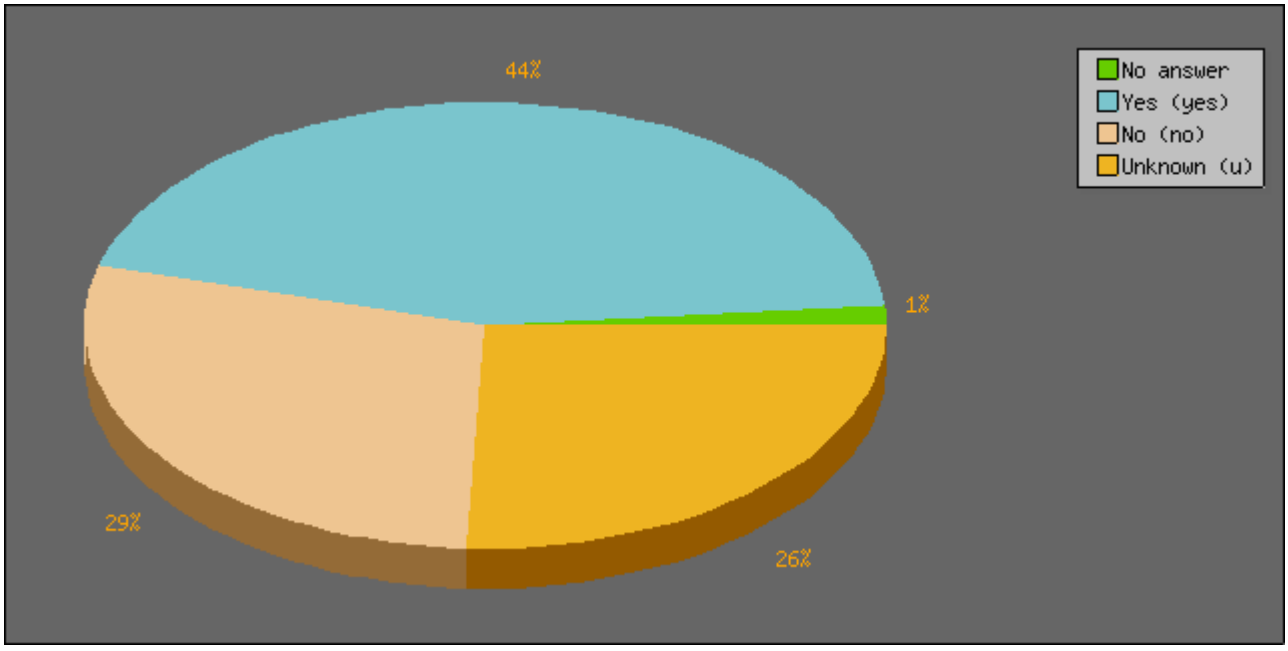
Field Summary for 1.2.4:		
Were responders able to communicate across regional, State and Federal agencies?		
Answer	**Count**	**Percentage**
No answer	1	1.43%
Yes (yes)	31	44.29%
No (no)	20	28.57%
Unknown (u)	18	25.71%



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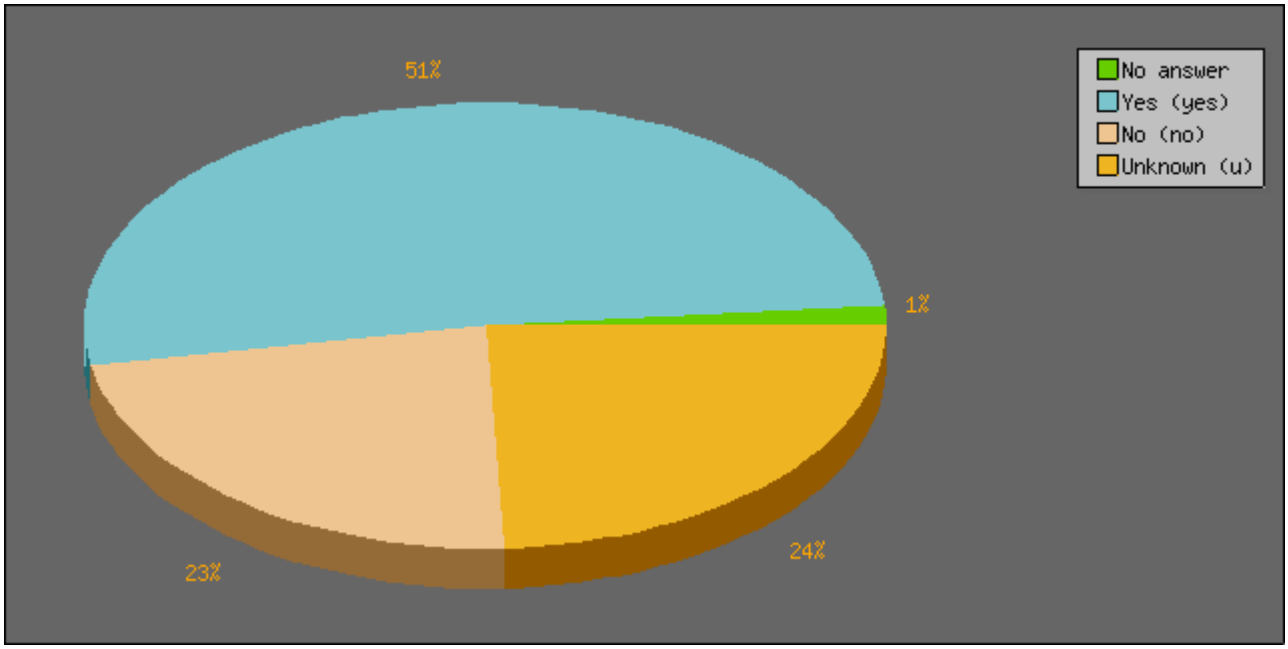
Field Summary for 1.2.5:		
Were redundant communications equipment available and activated?		
Answer	**Count**	**Percentage**
No answer	1	1.43%
Yes (yes)	36	51.43%
No (no)	16	22.86%
Unknown (u)	17	24.29%



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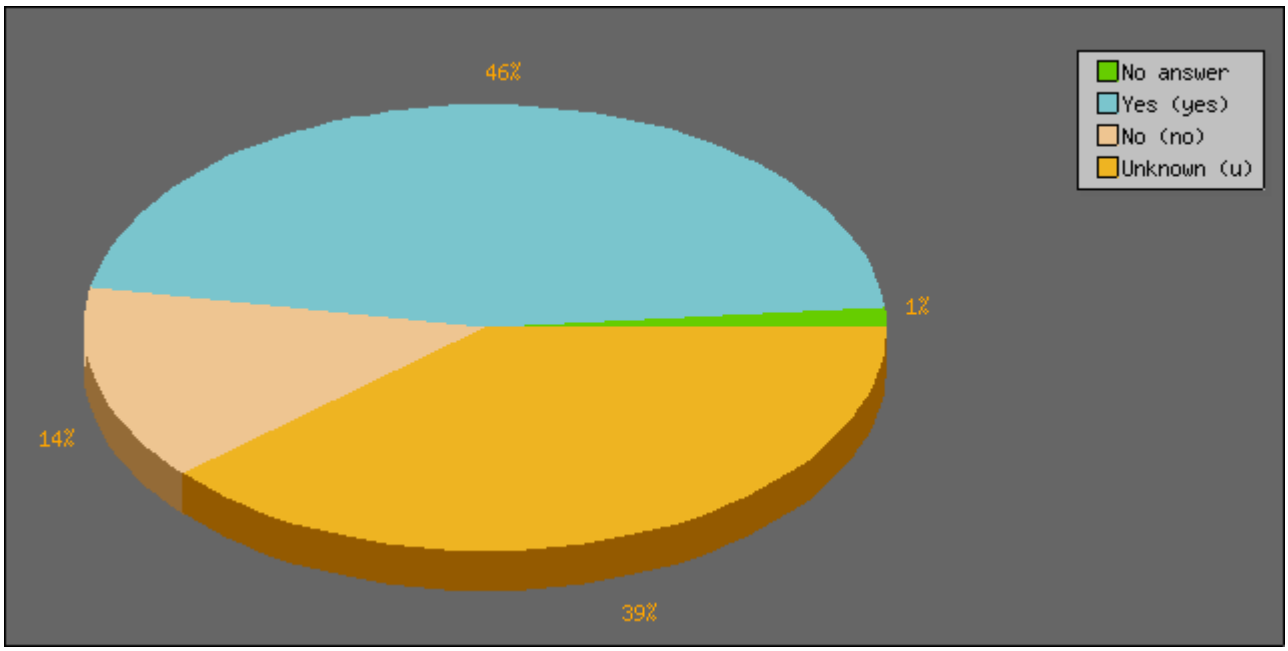
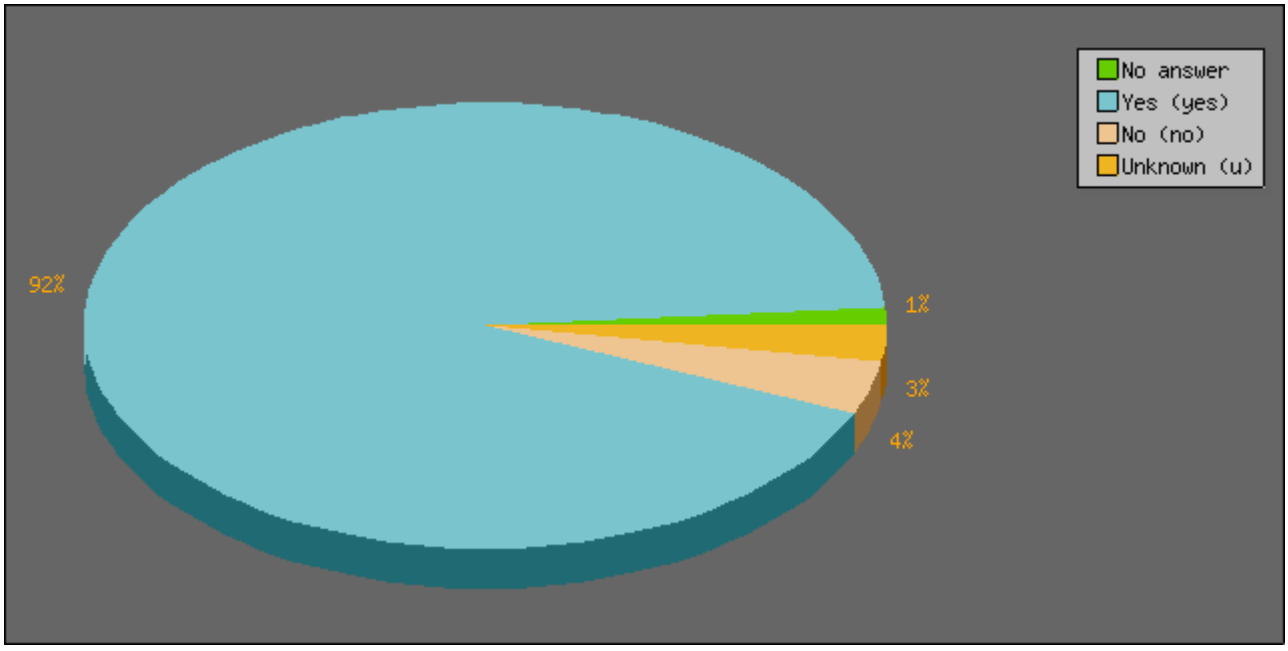
Field Summary for 1.2.9:		
Were common language and coordinated communication protocols implemented?		
Answer	**Count**	**Percentage**
No answer	1	1.43%
Yes (yes)	32	45.71%
No (no)	10	14.29%
Unknown (u)	27	38.57%



Field Summary for 2.1.0:		
Were you a part of Information Sharing and Collaboration (Disseminate Threat Information)?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (Y)	77	100.00%
No (N)	0	0.00%

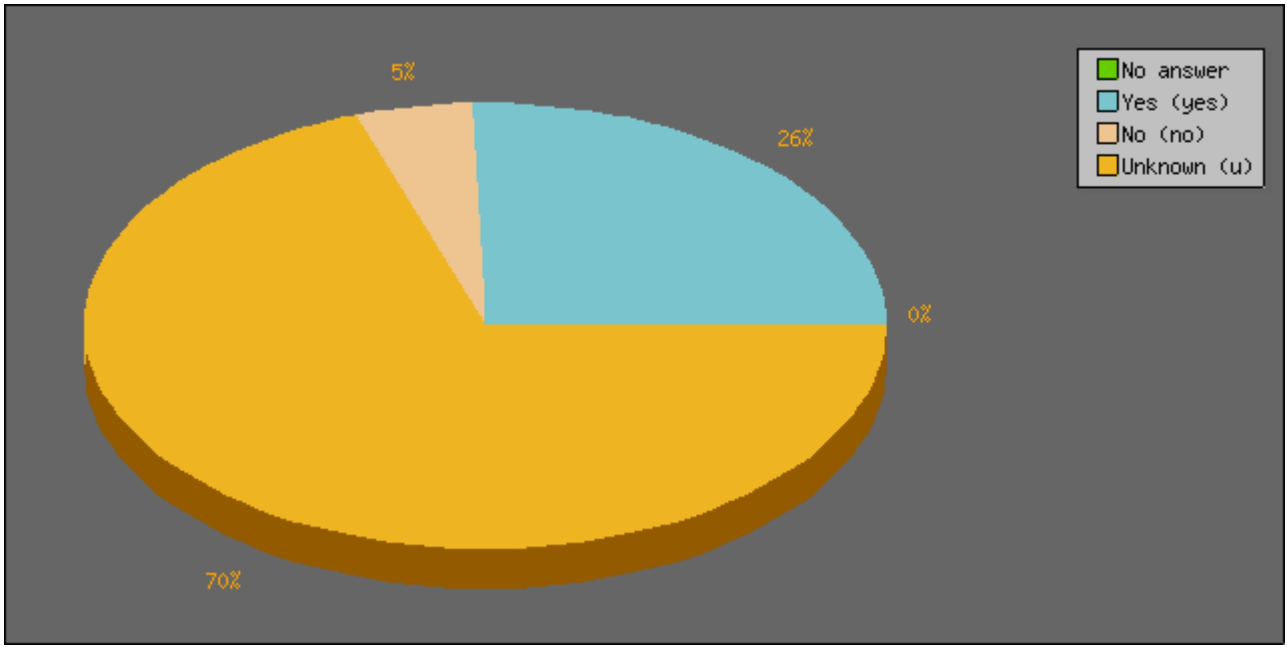
Field Summary for 2.1.1:		
Was hurricane threat information disseminated to your health agency / facility / work place?		
Answer	**Count**	**Percentage**
No answer	1	1.30%
Yes (yes)	71	92.21%
No (no)	3	3.90%
Unknown (u)	2	2.60%



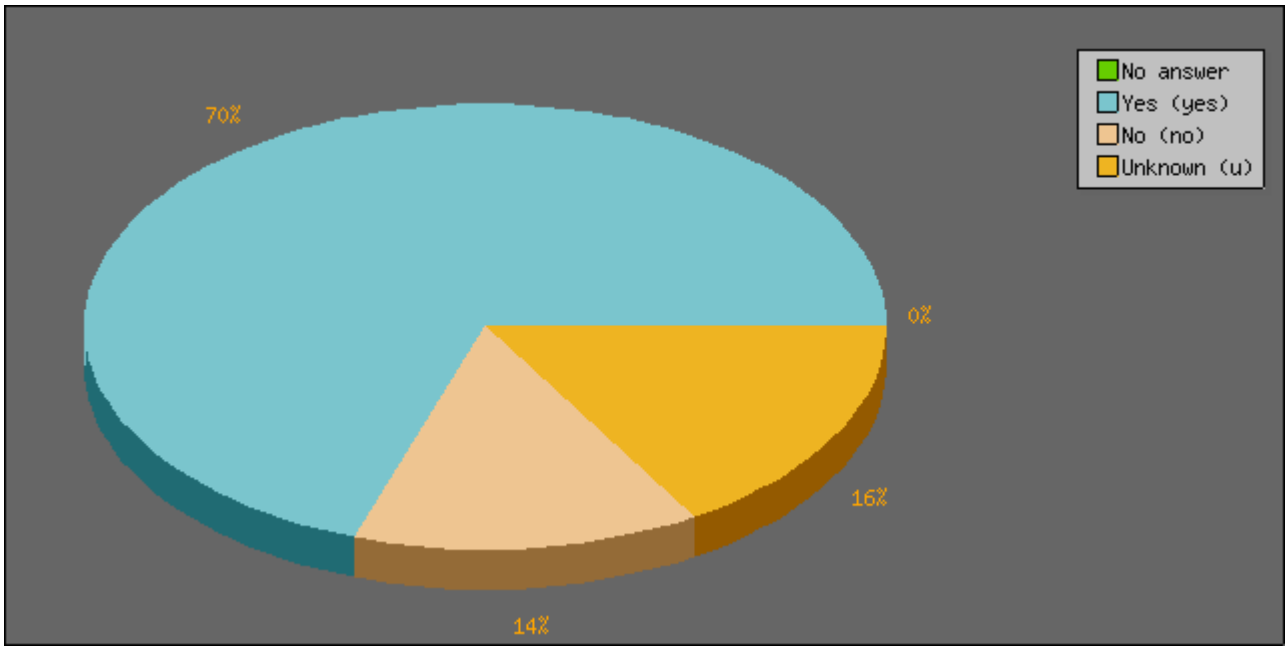
Field Summary for 3.3.0:		
Were you a part of Food and Agriculture Safety and Defense (Safeguard Public Health)?		
Answer	Count	Percentage
No answer	0	0.00%
Yes (Y)	43	100.00%
No (N)	0	0.00%

****

Field Summary for 3.3.7 / 8:		
Were humans with exposure to or ingestion of contaminated food products readily identified?		
Answer	Count	Percentage
No answer	0	0.00%
Yes (yes)	11	25.58%
No (no)	2	4.65%
Unknown (u)	30	69.77%

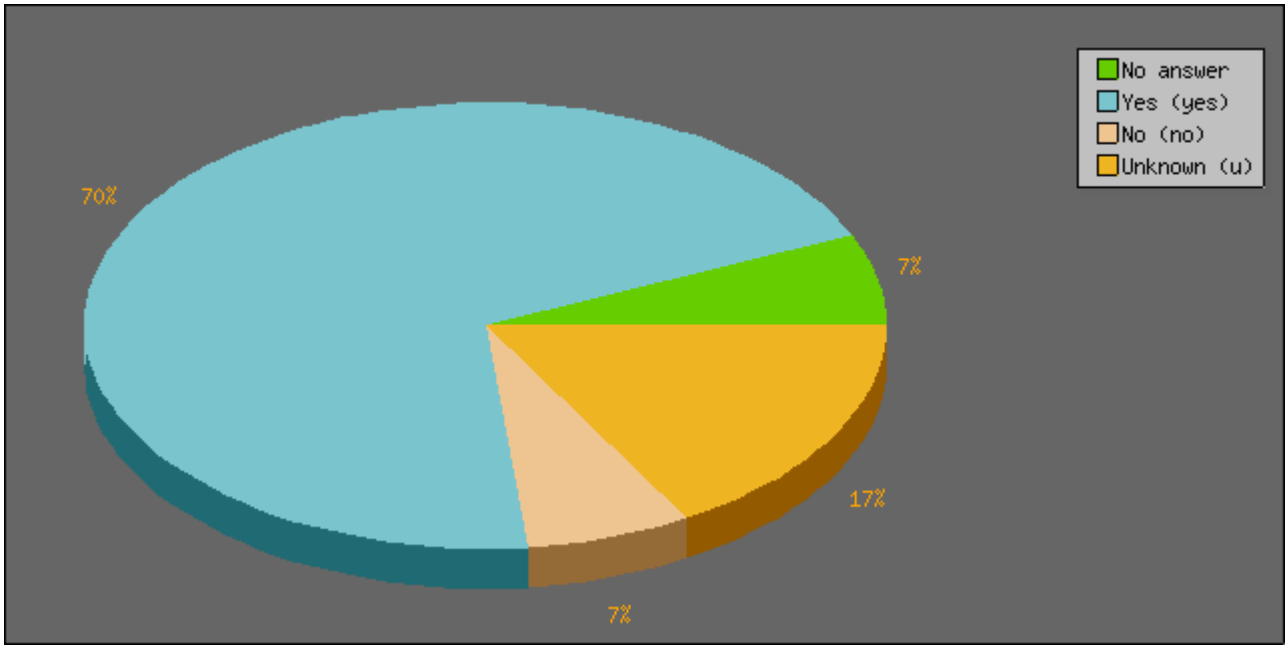


Field Summary for 3.3.12:		
Were risk communication efforts effective in providing timely & accurate information to the public regarding safety & handling of contaminated food products?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	30	69.77%
No (no)	6	13.95%
Unknown (u)	7	16.28%

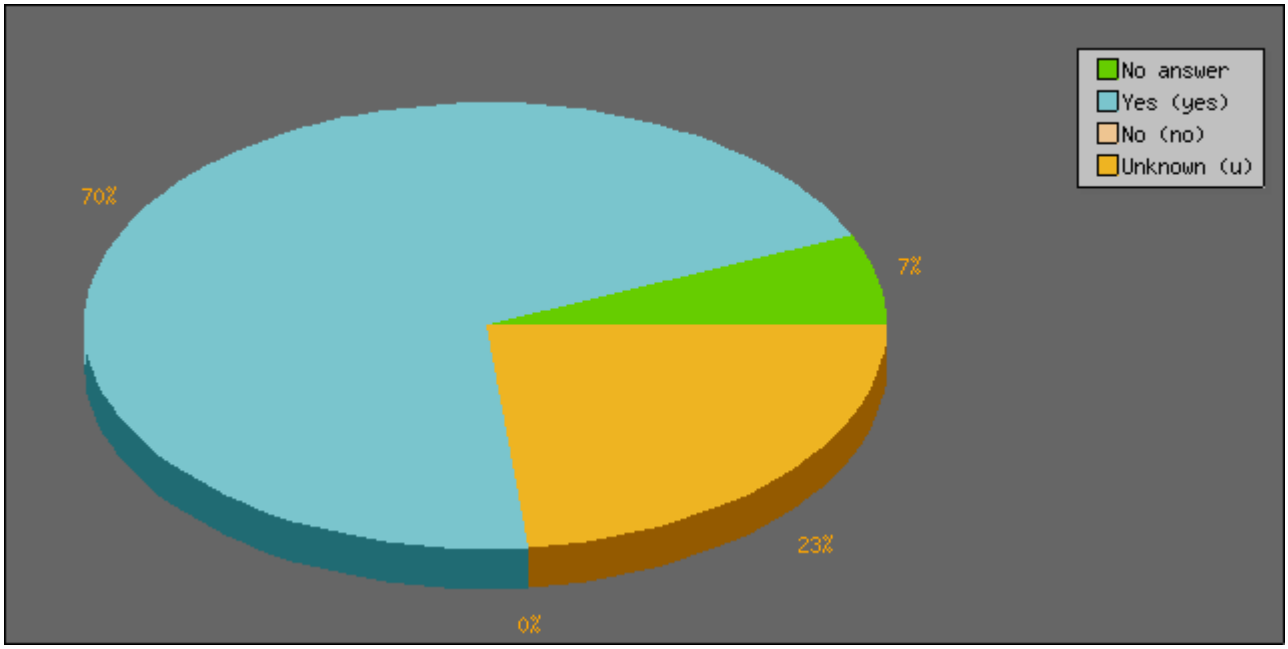


Field Summary for 3.4.0:		
Were you a part of Public Health Epidemiological Investigation and Laboratory Testing (Safeguard Public Health)?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (Y)	30	100.00%
No (N)	0	0.00%

Field Summary for 3.4.2:		
Were reportable diseases or syndromes of concern successfully recognized, diagnosed and properly reported?		
Answer	**Count**	**Percentage**
No answer	2	6.67%
Yes (yes)	21	70.00%
No (no)	2	6.67%
Unknown (u)	5	16.67%



Field Summary for 3.4.3:		
Were suspicious symptoms reported to medical personnel?		
Answer	**Count**	**Percentage**
No answer	2	6.67%
Yes (yes)	21	70.00%
No (no)	0	0.00%
Unknown (u)	7	23.33%



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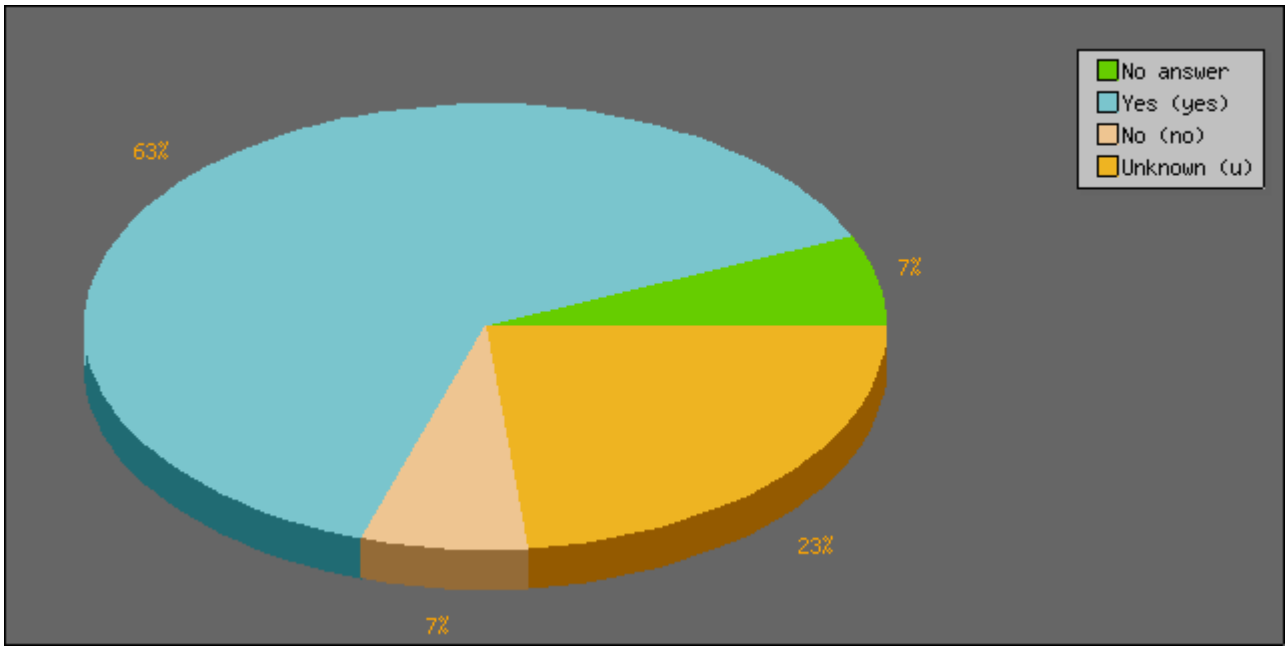
Field Summary for 3.4.4 / 5:		
Were outbreak cases, if any, adequately documented and reported in a timely fashion?		
Answer	**Count**	**Percentage**
No answer	2	6.67%
Yes (yes)	19	63.33%
No (no)	2	6.67%
Unknown (u)	7	23.33%



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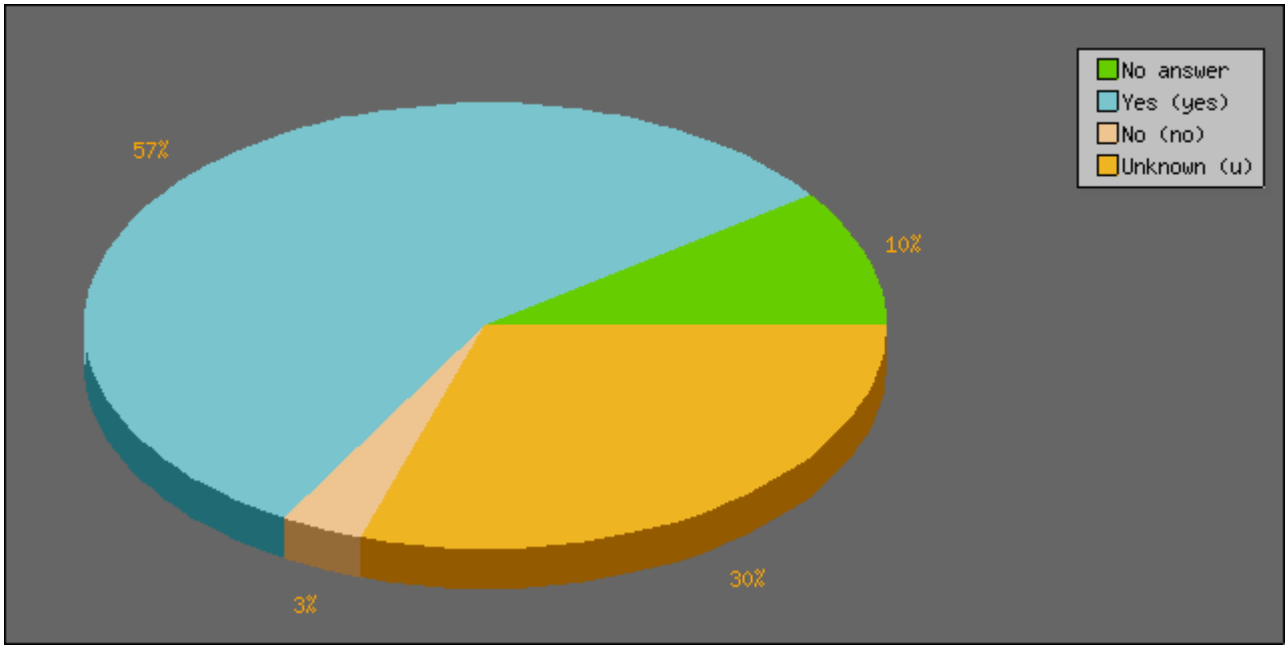
Field Summary for 3.4.6:		
When needed, were alerts generated in a timely fashion?		
Answer	**Count**	**Percentage**
No answer	3	10.00%
Yes (yes)	17	56.67%
No (no)	1	3.33%
Unknown (u)	9	30.00%



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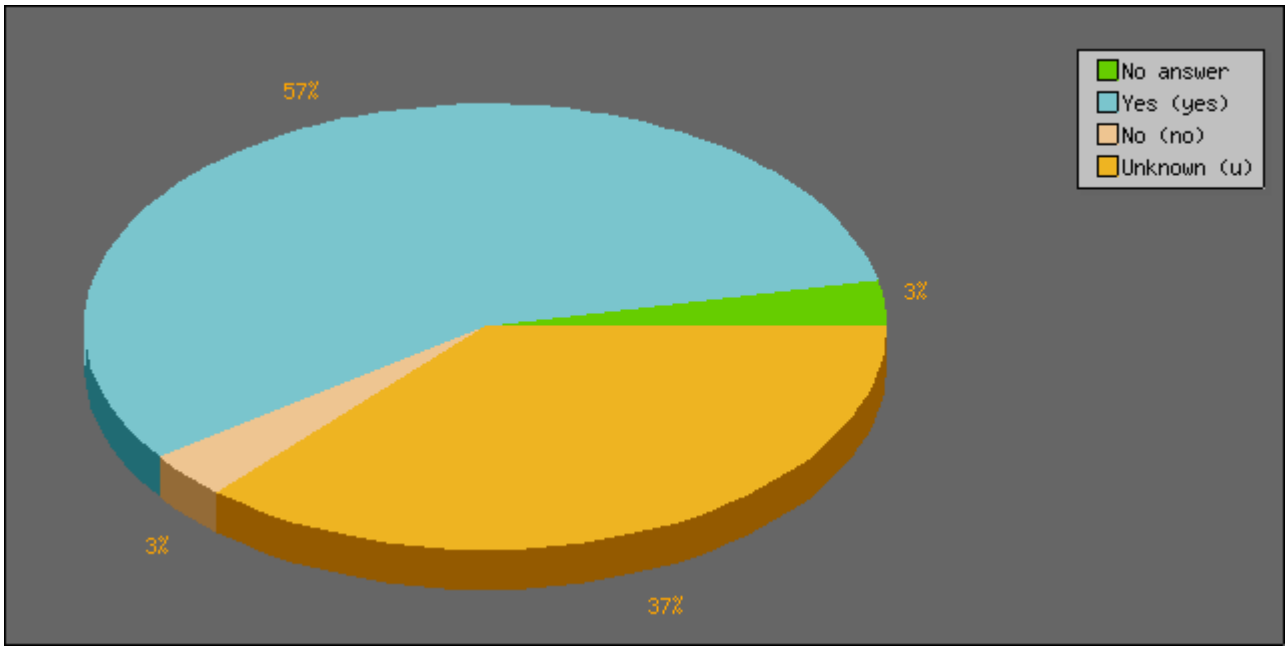
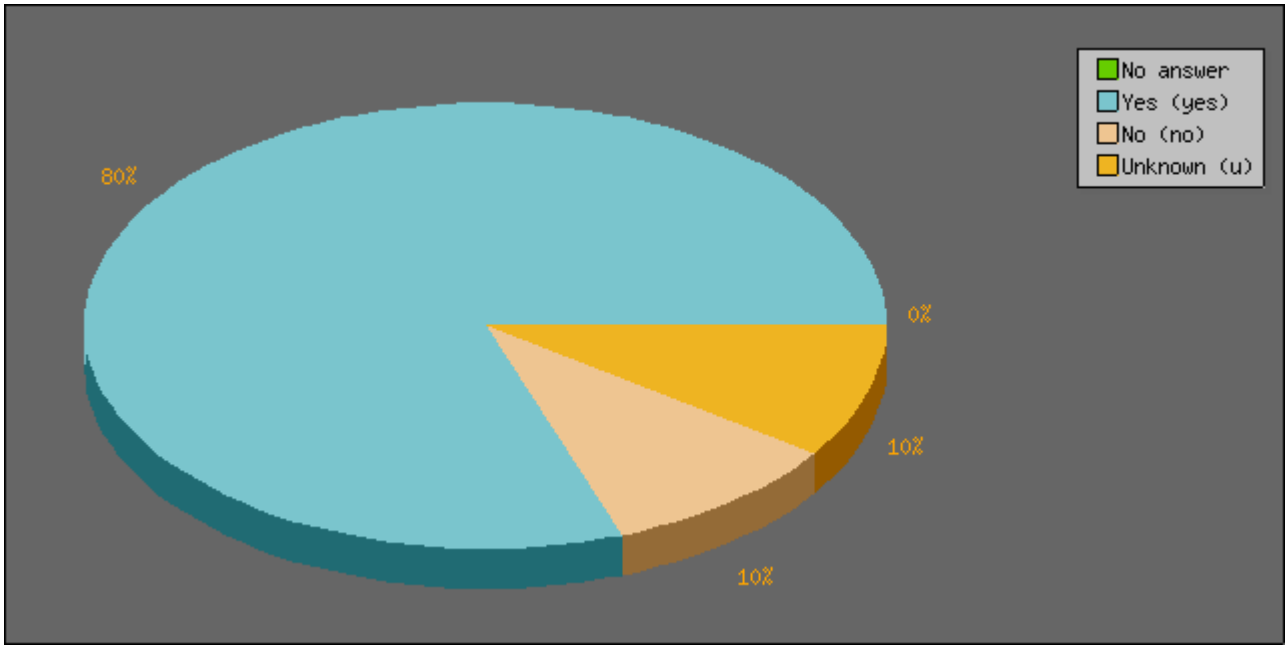
Field Summary for 3.4.8/10/11:		
Were laboratory specimens collected, handled, and analyzed correctly including maintaining a chain of evidence when necessary?		
Answer	**Count**	**Percentage**
No answer	1	3.33%
Yes (yes)	17	56.67%
No (no)	1	3.33%
Unknown (u)	11	36.67%



Field Summary for 3.5.0:		
Were you a part of Citizen Preparedness and Participation (Prepare the Public)?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (Y)	41	100.00%
No (N)	0	0.00%

Field Summary for 3.5.1 / 3:		
Was public information on personal preparedness and emergency plans distributed using multiple channels and venues?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	33	80.49%
No (no)	4	9.76%
Unknown (u)	4	9.76%



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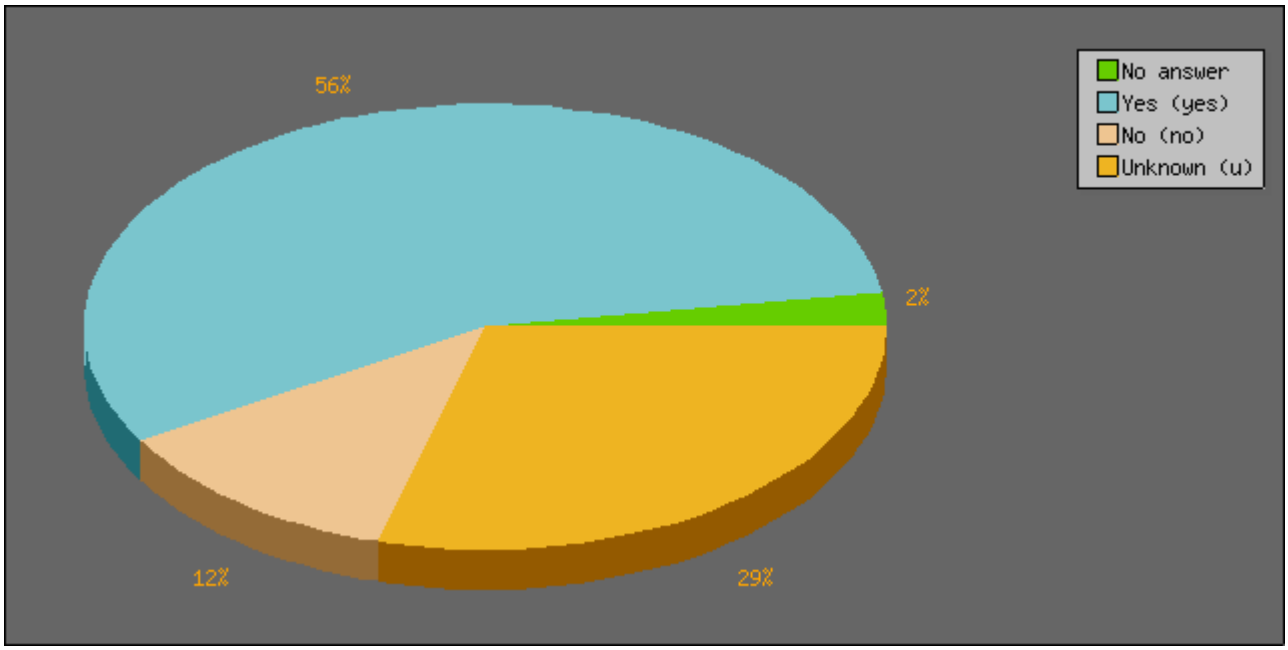
Field Summary for 3.5.7:		
Was information on personal preparedness and emergency plans for special needs or non-English speaking populations distributed using multiple channels and venues?		
Answer	**Count**	**Percentage**
No answer	1	2.44%
Yes (yes)	23	56.10%
No (no)	5	12.20%
Unknown (u)	12	29.27%



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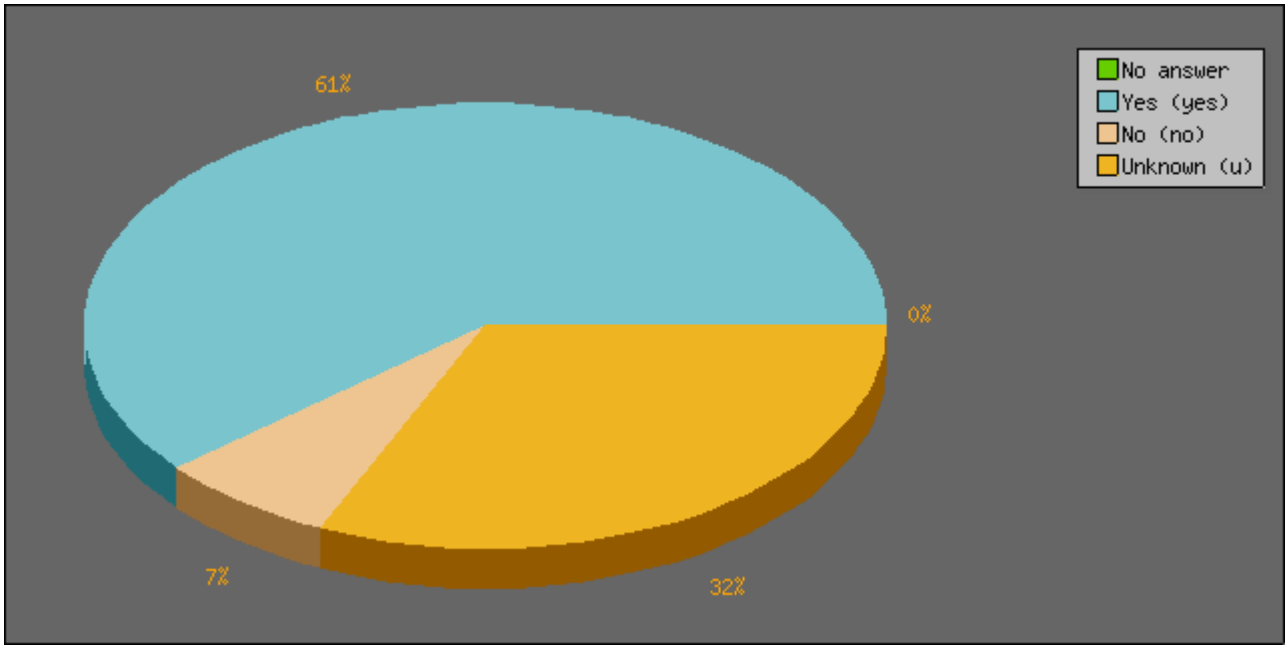
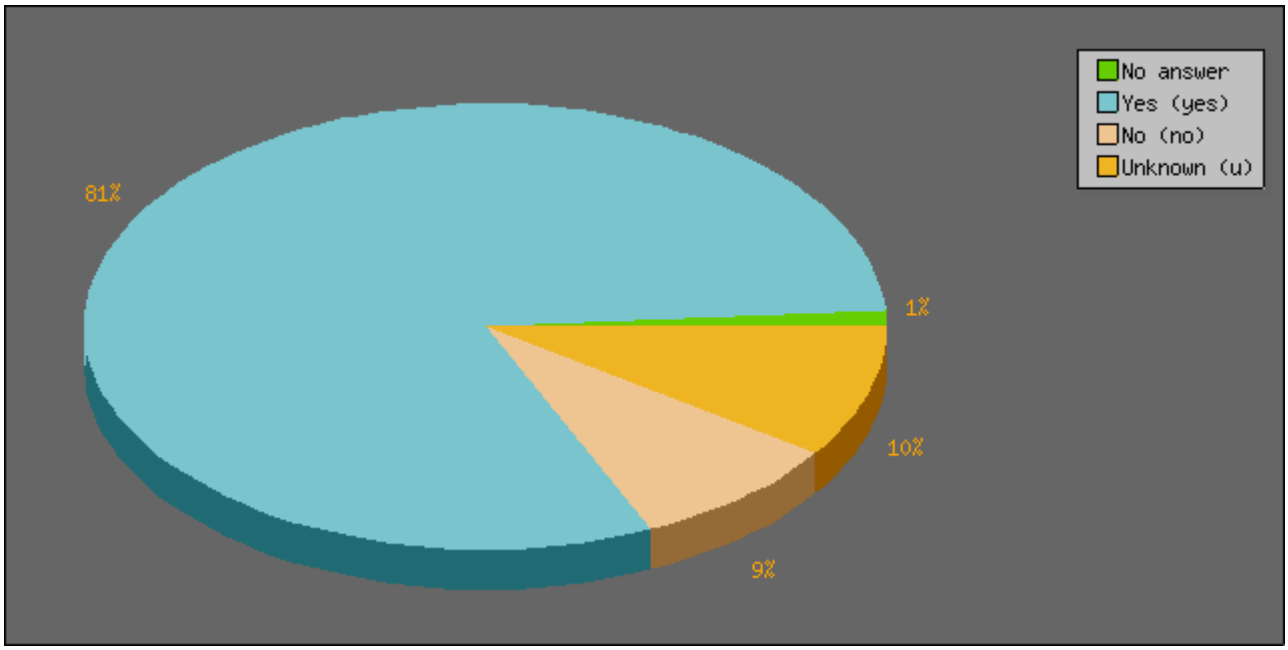
Field Summary for 3.5.11:		
Was public information tailored to address special needs populations and cultural differences?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	25	60.98%
No (no)	3	7.32%
Unknown (u)	13	31.71%

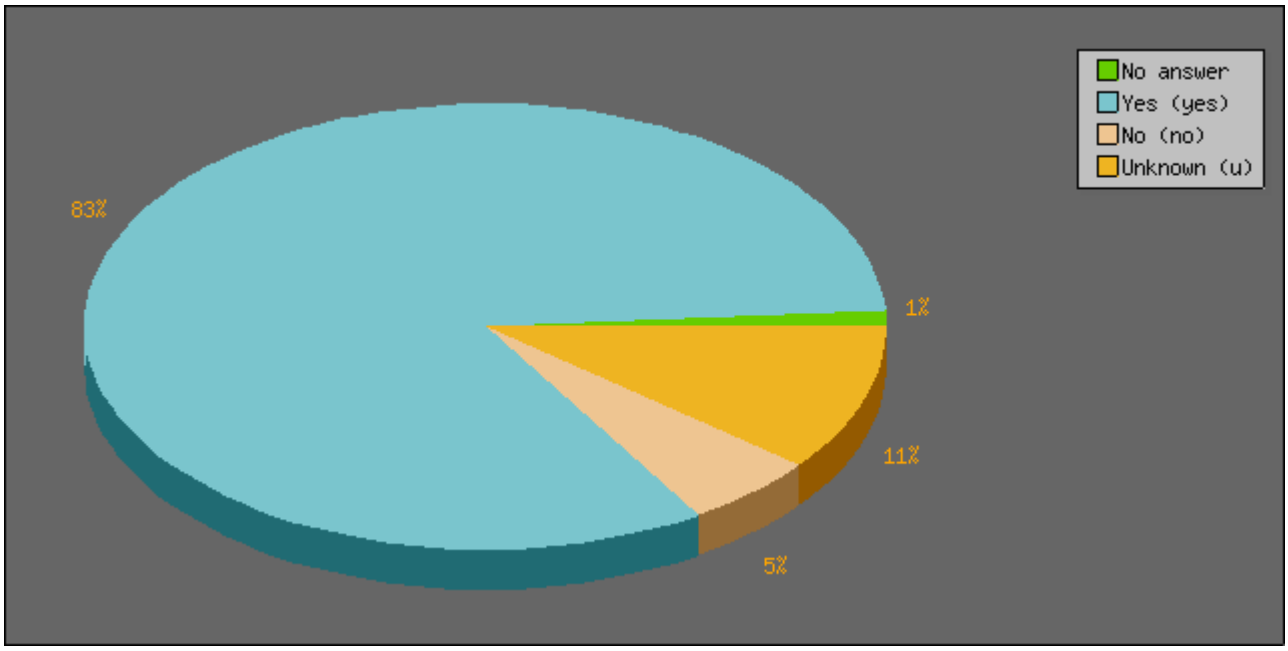


Field Summary for 4.1.0:		
Were you a part of On-Site Incident Management (Manage Incident)?		
Answer	Count	Percentage
No answer	0	0.00%
Yes (Y)	93	100.00%
No (N)	0	0.00%

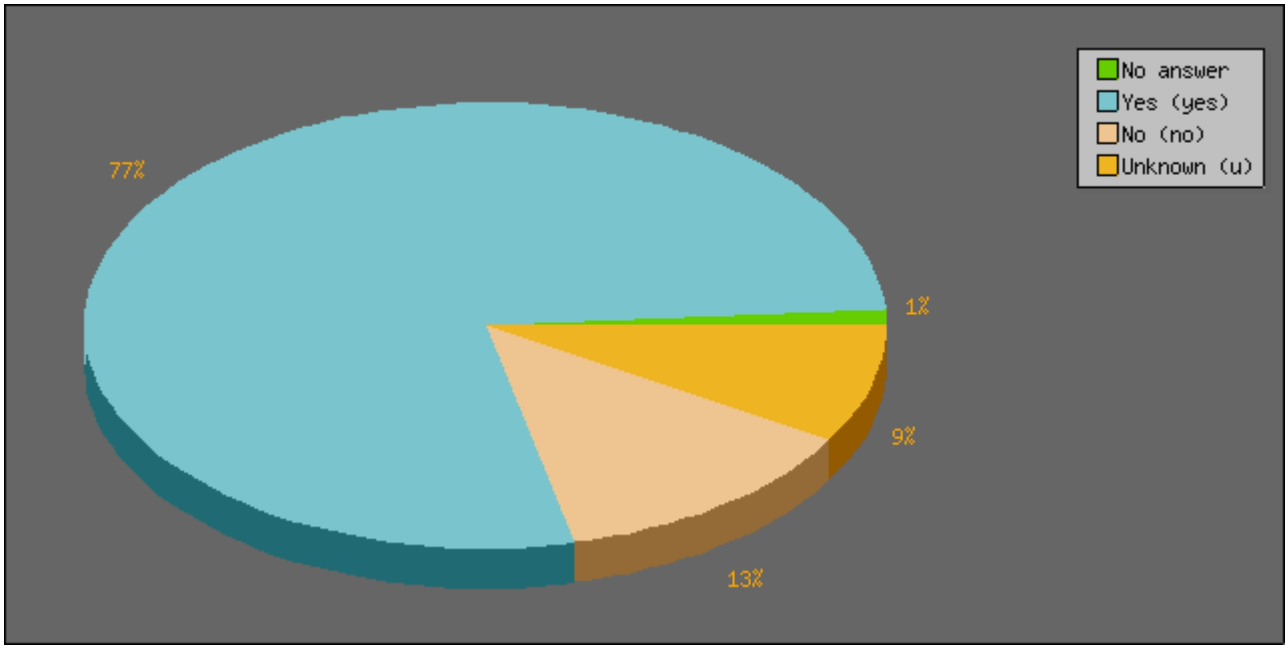
Field Summary for 4.1.4:		
Were you aware of the IAP?		
Answer	Count	Percentage
No answer	1	1.08%
Yes (yes)	75	80.65%
No (no)	8	8.60%
Unknown (u)	9	9.68%



Field Summary for 4.1.4:		
Was an Incident Action Plan (IAP) established?		
Answer	**Count**	**Percentage**
No answer	1	1.08%
Yes (yes)	77	82.80%
No (no)	5	5.38%
Unknown (u)	10	10.75%



Field Summary for 4.1.5:		
Were all response activities coordinated through the incident commander?		
Answer	**Count**	**Percentage**
No answer	1	1.08%
Yes (yes)	72	77.42%
No (no)	12	12.90%
Unknown (u)	8	8.60%



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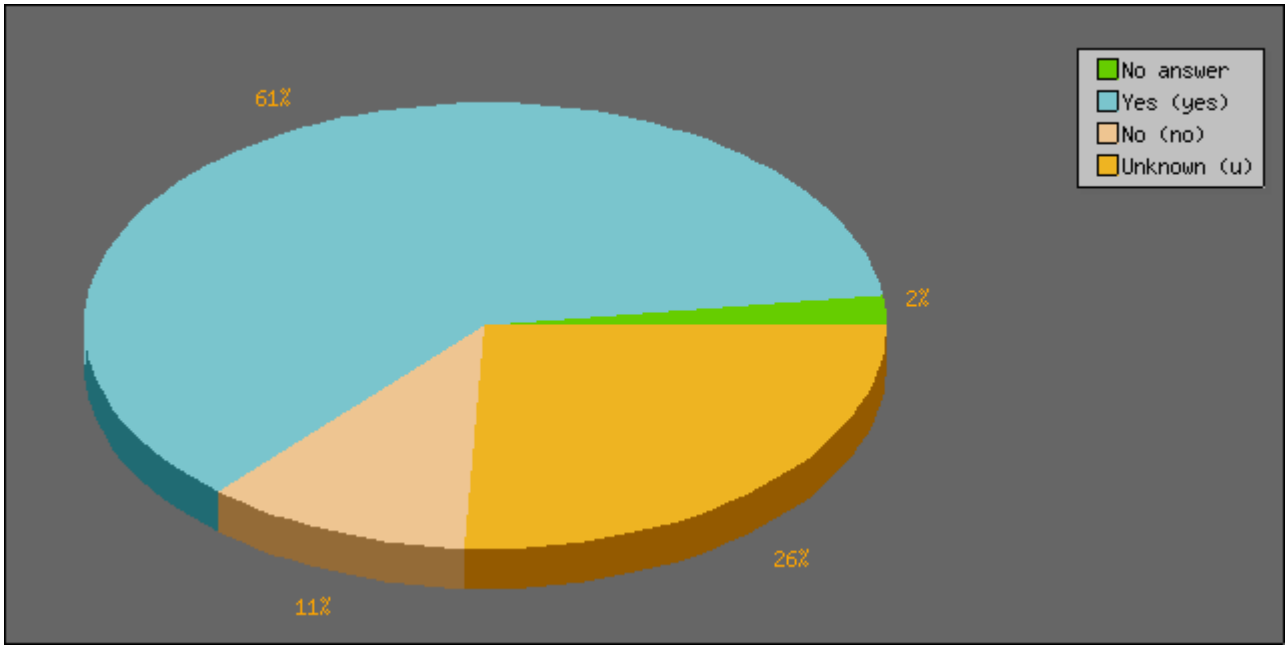
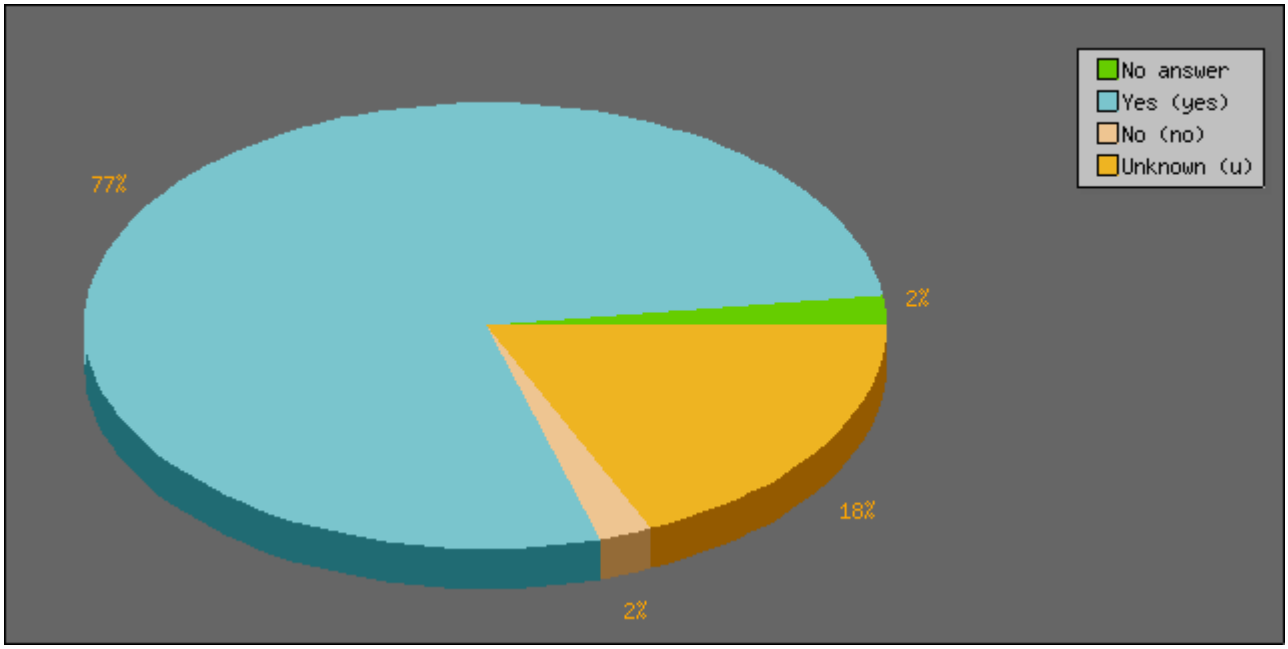
Field Summary for 4.1.6:		
Were there Standard Operating Procedures (SOP) for establishing an Area Command?		
Answer	**Count**	**Percentage**
No answer	2	2.15%
Yes (yes)	57	61.29%
No (no)	10	10.75%
Unknown (u)	24	25.81%

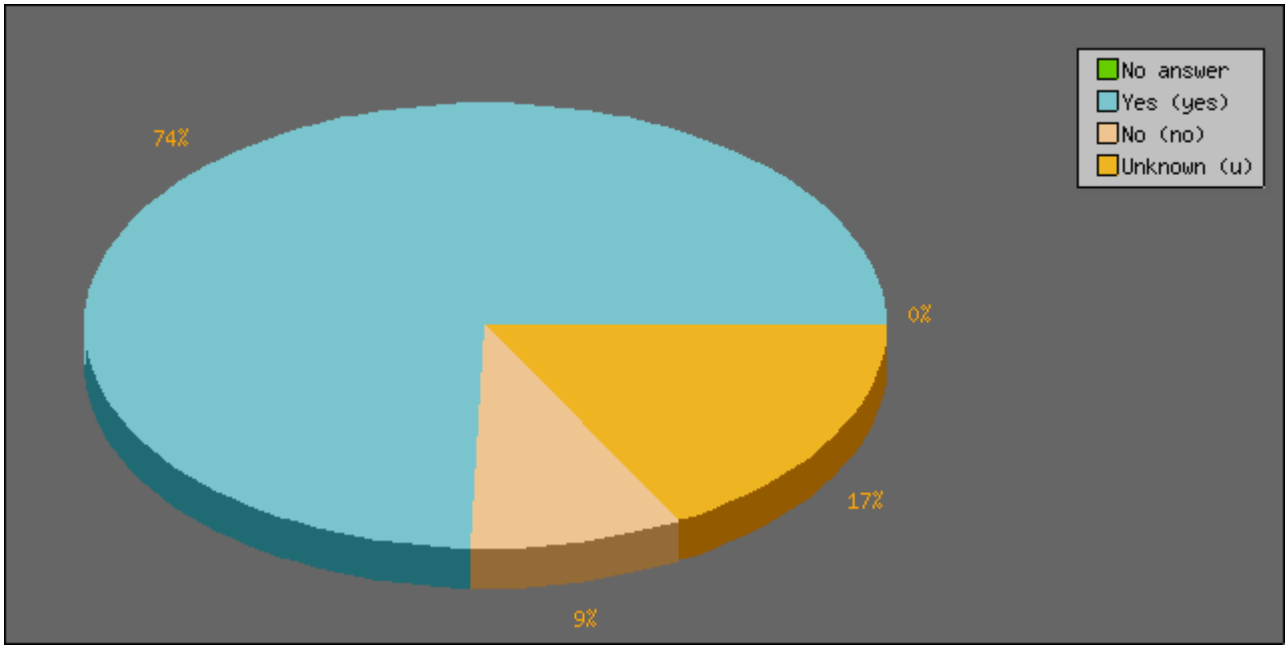


Field Summary for 4.1.7:		
Was the need for Area Command identified?		
Answer	**Count**	**Percentage**
No answer	2	2.15%
Yes (yes)	72	77.42%
No (no)	2	2.15%
Unknown (u)	17	18.28%



Field Summary for 4.8.0:		
Were you a part of Environmental Health and Vector Control (Respond to Hazard)?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (Y)	47	100.00%
No (N)	0	0.00%

Field Summary for 4.8.1 / 3:		
Were environmental health risk management messages effectively communicated to the public?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	35	74.47%
No (no)	4	8.51%
Unknown (u)	8	17.02%



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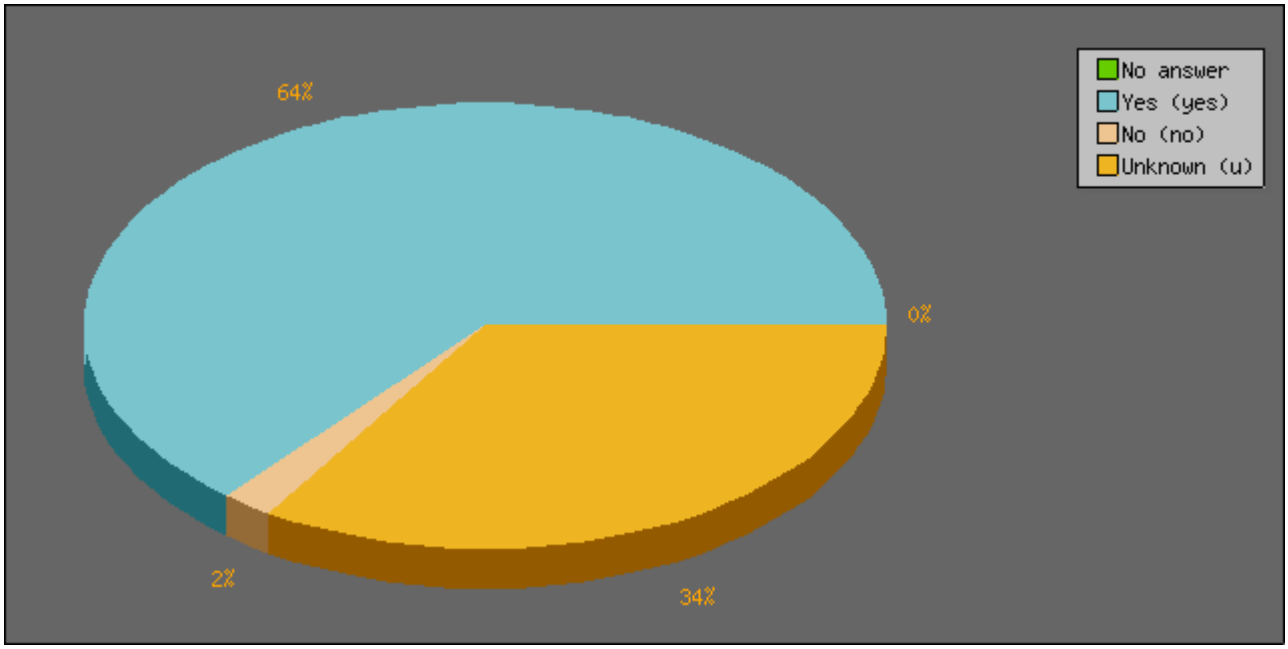
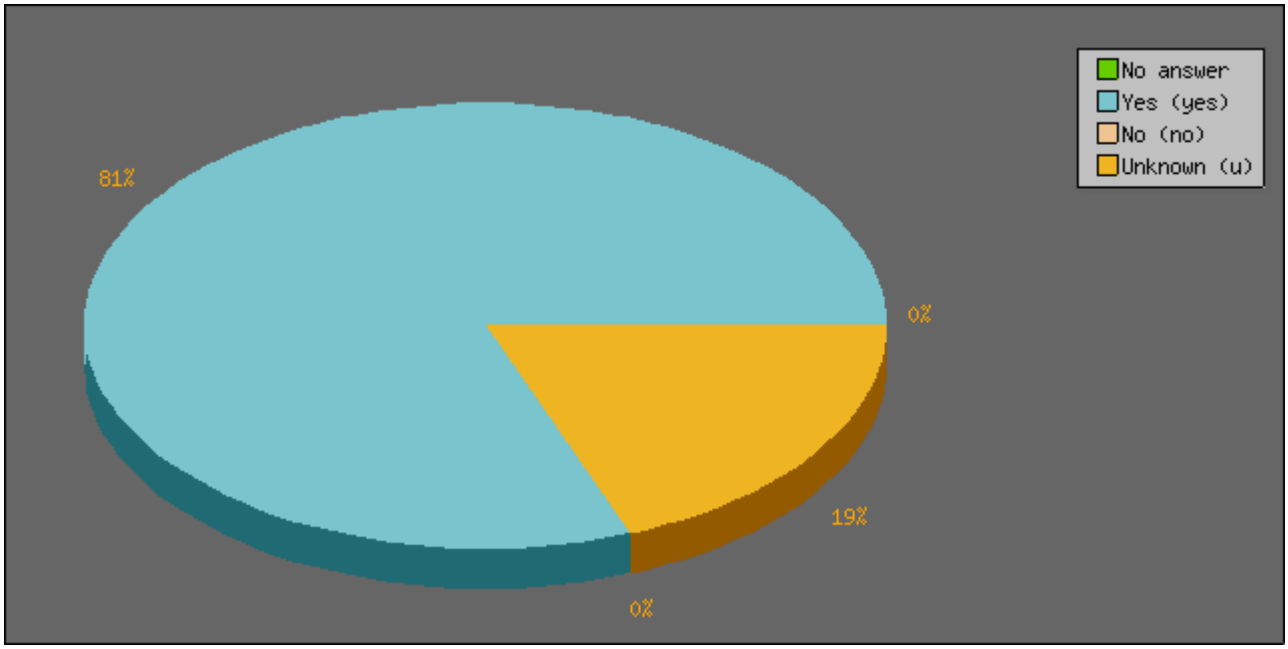
Field Summary for 4.8.2 / 6:		
Were vector control plans (ground and aerial) successfully implemented?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	30	63.83%
No (no)	1	2.13%
Unknown (u)	16	34.04%

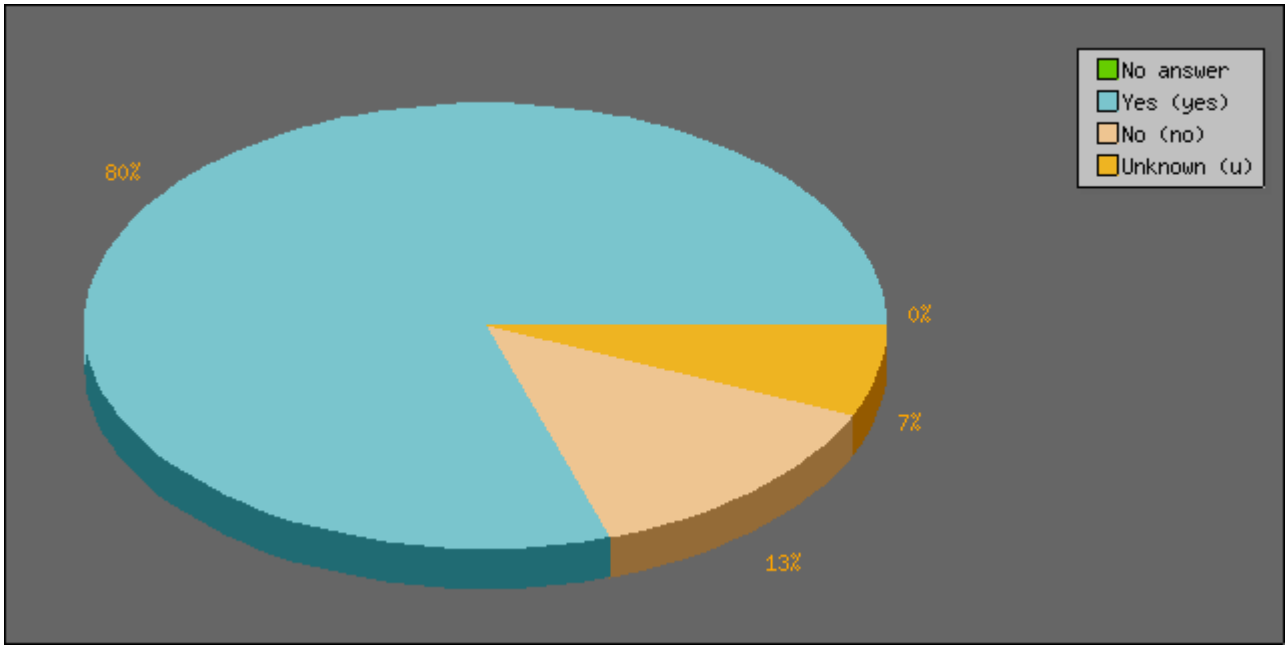


Field Summary for 4.8.5:		
Environmental health testing and monitoring was provided.		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	38	80.85%
No (no)	0	0.00%
Unknown (u)	9	19.15%



Field Summary for 4.12.0:		
Were you a part of Citizen Protection: Evacuation and/or In-Place Protection (Implement Protective Actions)?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (Y)	30	100.00%
No (N)	0	0.00%

Field Summary for 4.12.2:		
Was there adequate time to evacuate the affected general population?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	24	80.00%
No (no)	4	13.33%
Unknown (u)	2	6.67%



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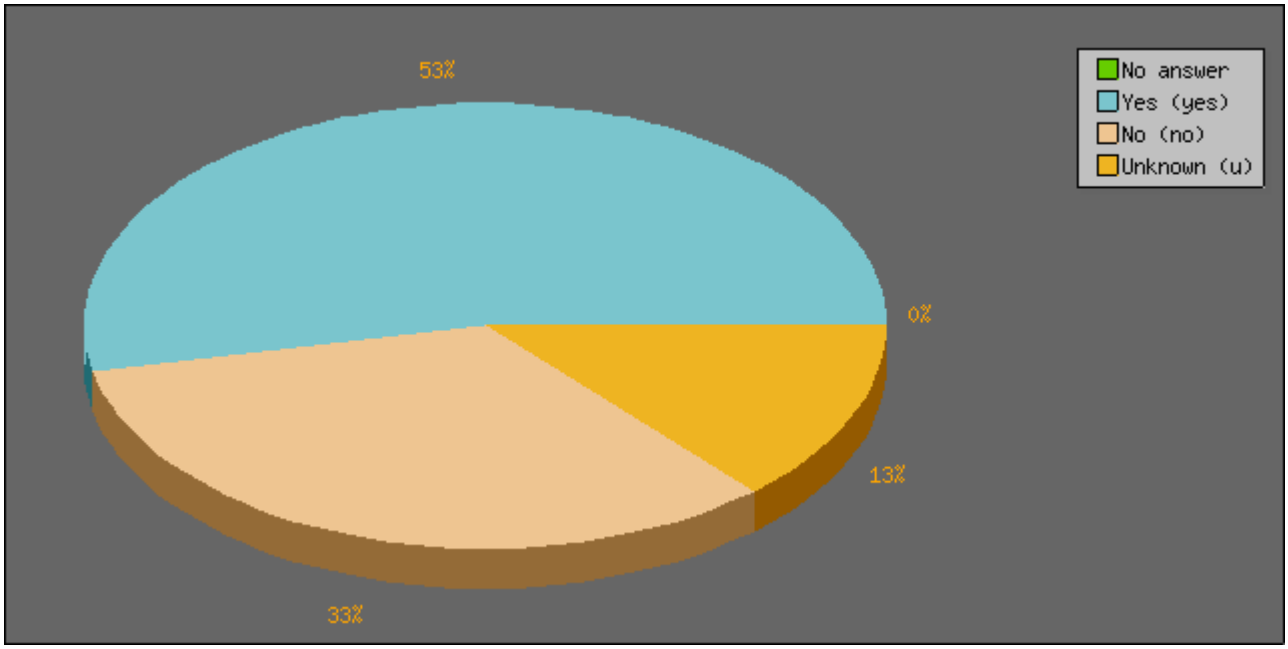
Field Summary for 4.12.3:		
Was there adequate time to evacuate special needs populations?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	16	53.33%
No (no)	10	33.33%
Unknown (u)	4	13.33%



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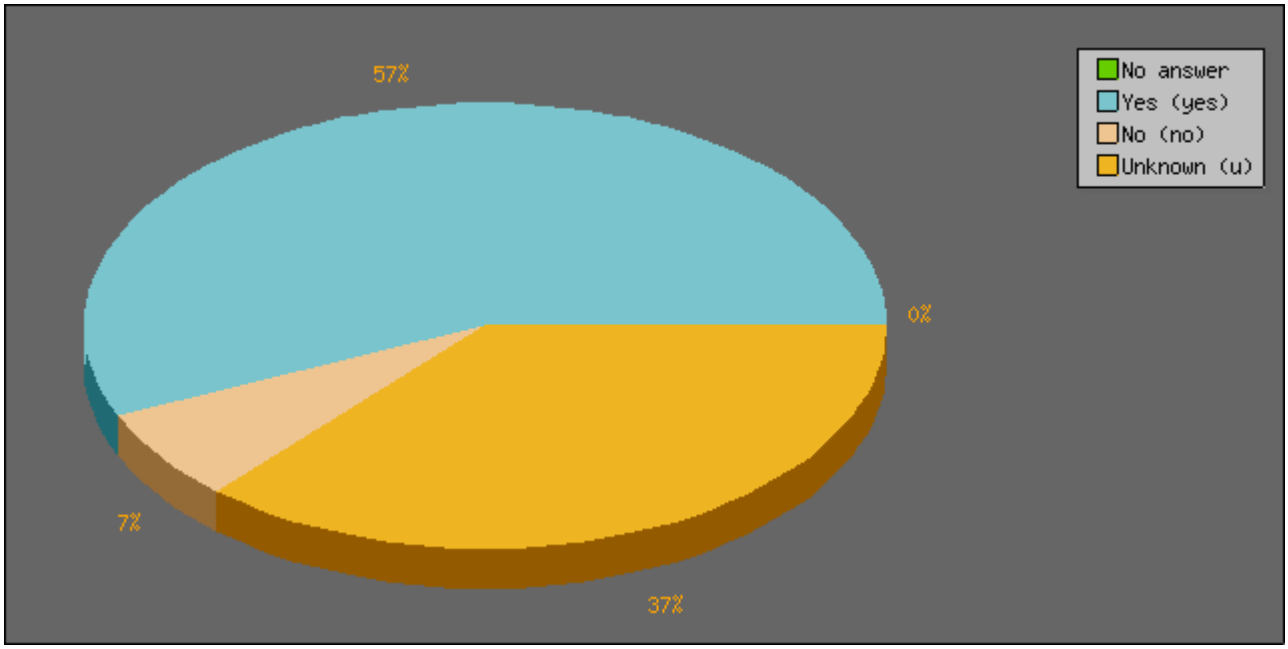
Field Summary for 4.12.4:		
Were traffic and transportation plans implemented?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	17	56.67%
No (no)	2	6.67%
Unknown (u)	11	36.67%



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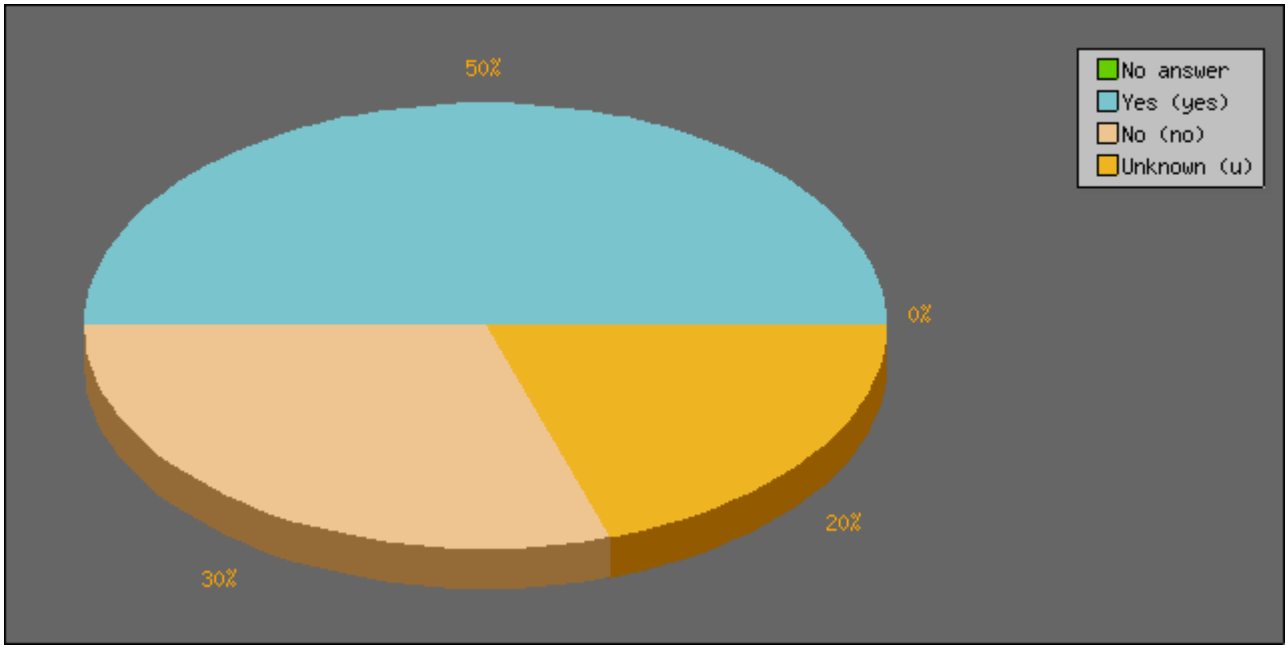
Field Summary for 4.12.5:		
Was the affected general population successfully evacuated?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	15	50.00%
No (no)	9	30.00%
Unknown (u)	6	20.00%



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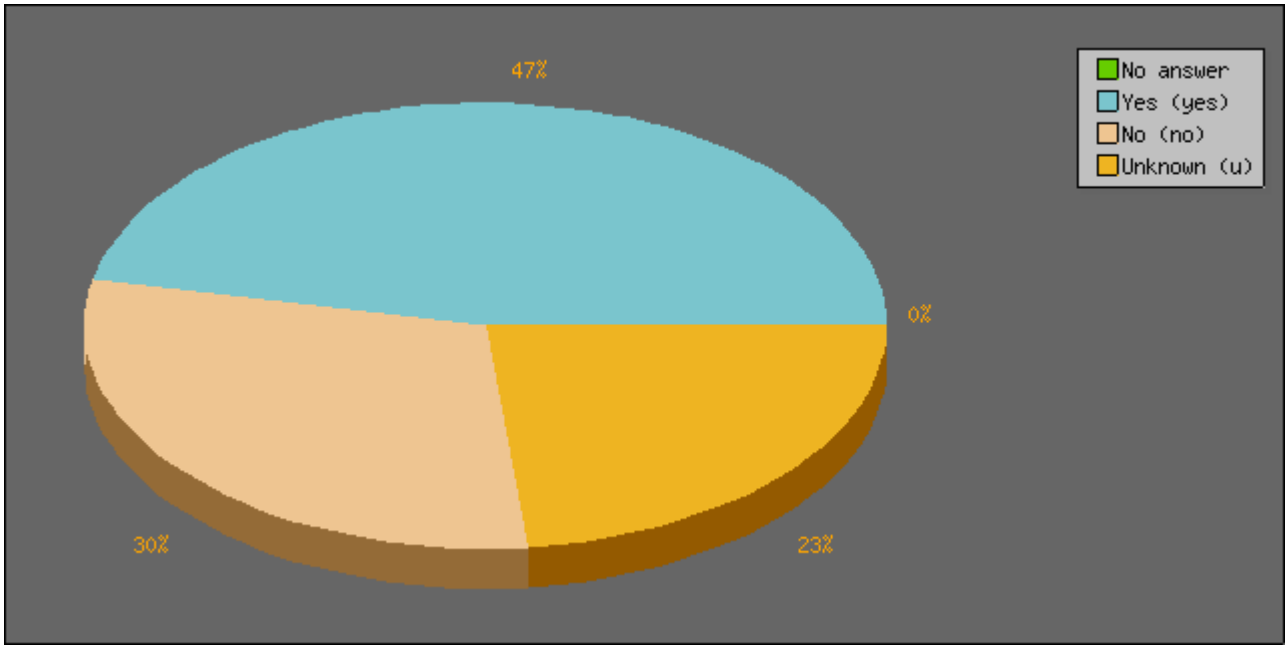
Field Summary for 4.12.6:		
Were special needs populations successfully evacuated?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	14	46.67%
No (no)	9	30.00%
Unknown (u)	7	23.33%



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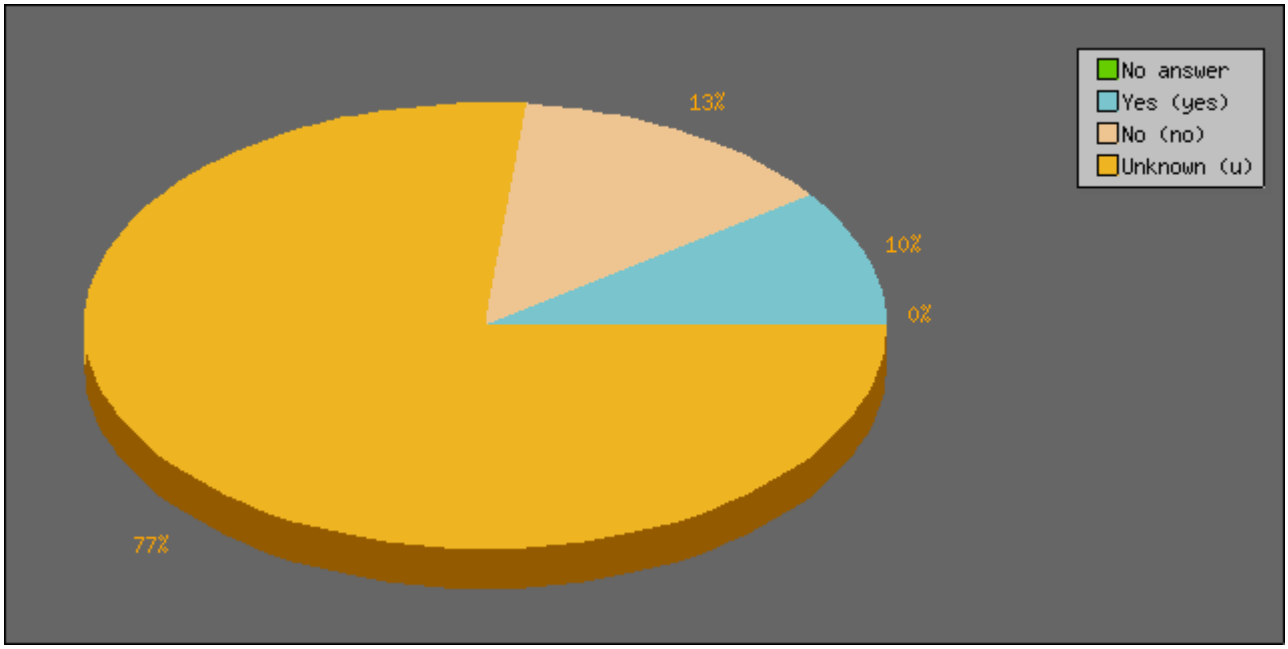
Field Summary for 4.12.7:		
Were homeless populations identified?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	3	10.00%
No (no)	4	13.33%
Unknown (u)	23	76.67%



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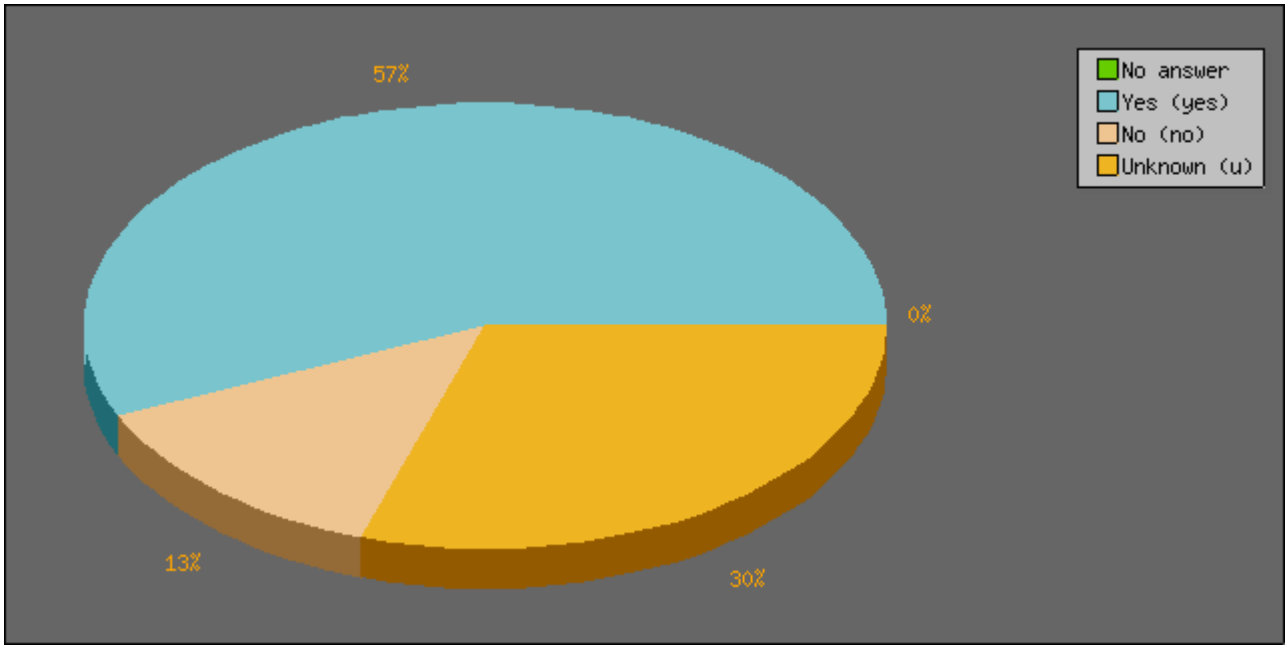
Field Summary for 4.12.9:		
Was coordination with surrounding jurisdictions implemented to ensure adequate locations and facilities for receiving evacuees?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	17	56.67%
No (no)	4	13.33%
Unknown (u)	9	30.00%



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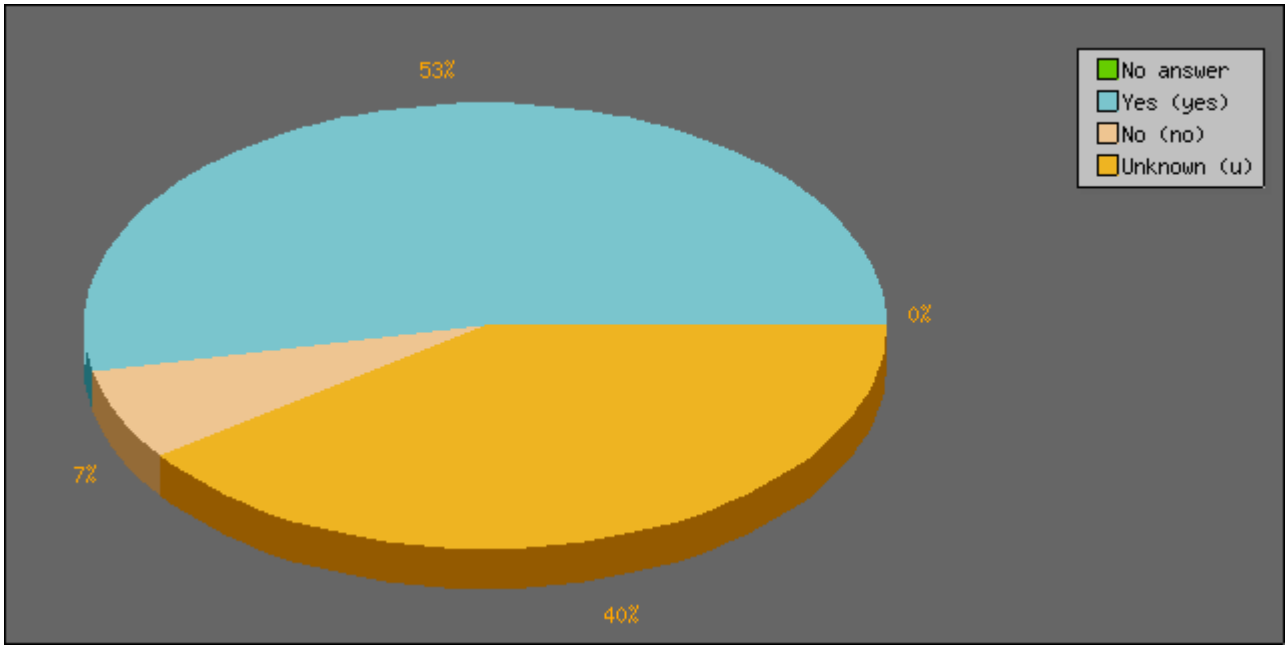
Field Summary for 4.12.10:		
Was the public accurately notified of shelter-in-place strategy (locations identified, duration of shelter, steps to take, etc.)?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	16	53.33%
No (no)	2	6.67%
Unknown (u)	12	40.00%



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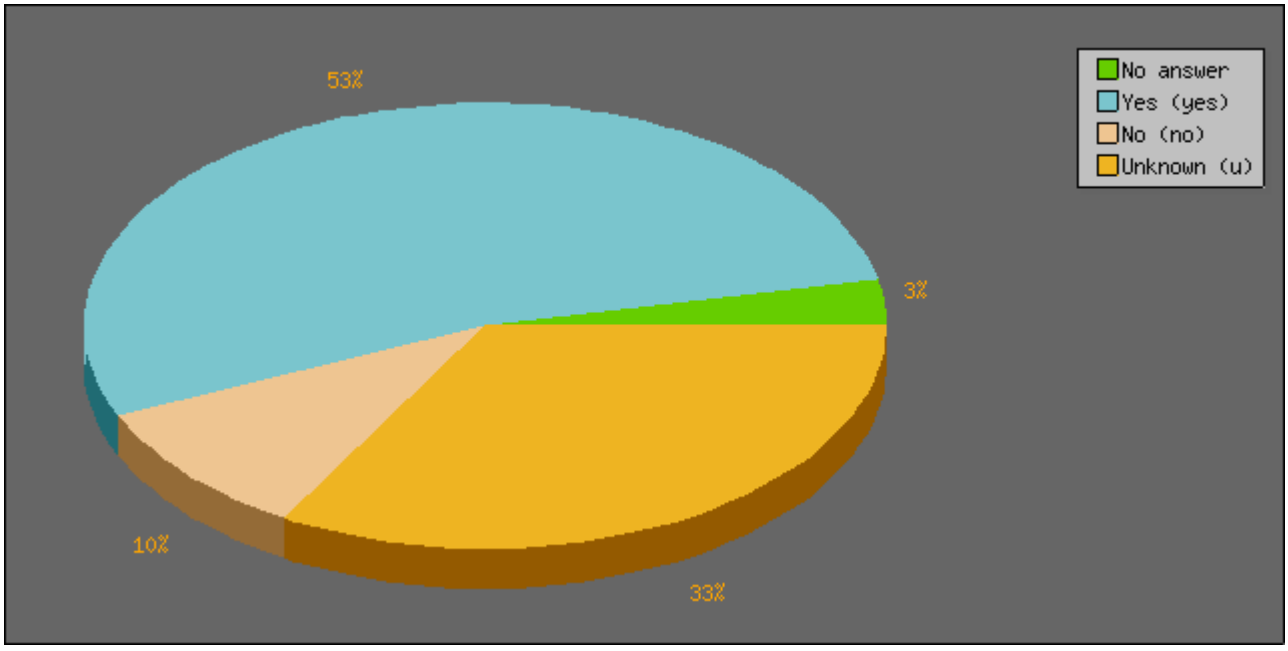
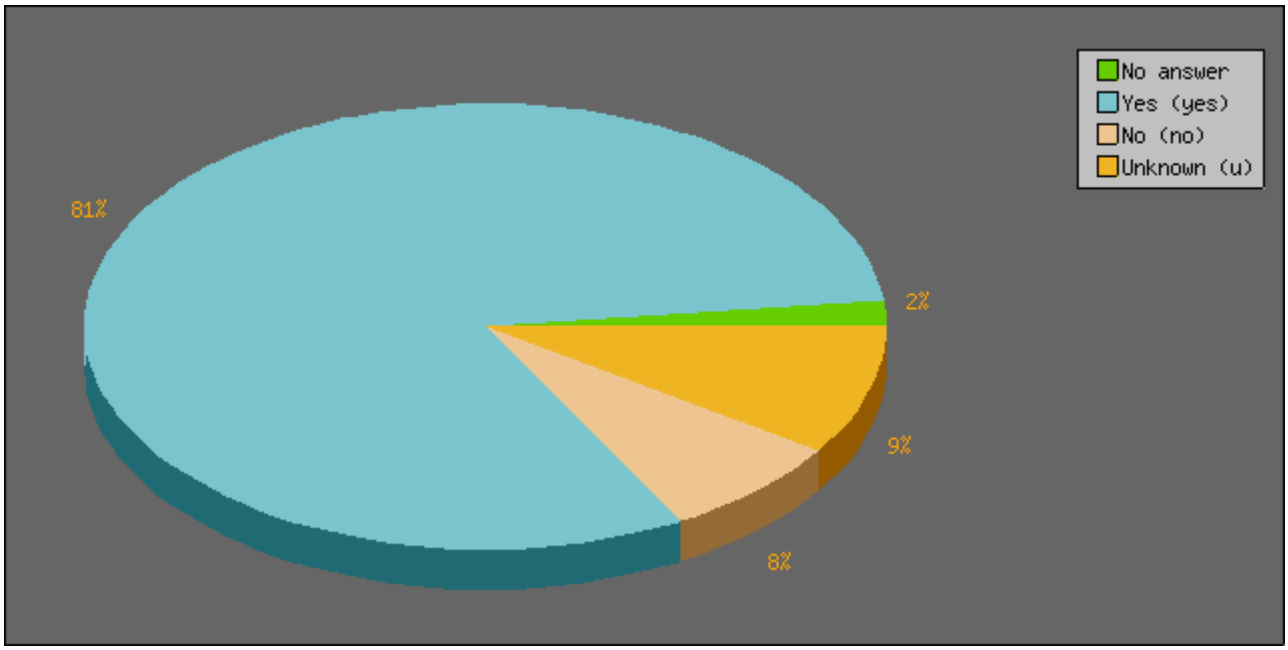
Field Summary for 4.12.11:		
Was there adequate time to notify affected population of shelter-in-place strategy?		
Answer	**Count**	**Percentage**
No answer	1	3.33%
Yes (yes)	16	53.33%
No (no)	3	10.00%
Unknown (u)	10	33.33%



Field Summary for 4.16.0:		
Were you a part of Triage and Pre-Hospital Treatment (Provide Medical Care)?		
Answer	Count	Percentage
No answer	0	0.00%
Yes (Y)	53	100.00%
No (N)	0	0.00%

Field Summary for 4.16.1:		
Were triage and pre-hospital treatment plans successfully implemented?		
Answer	Count	Percentage
No answer	1	1.89%
Yes (yes)	43	81.13%
No (no)	4	7.55%
Unknown (u)	5	9.43%



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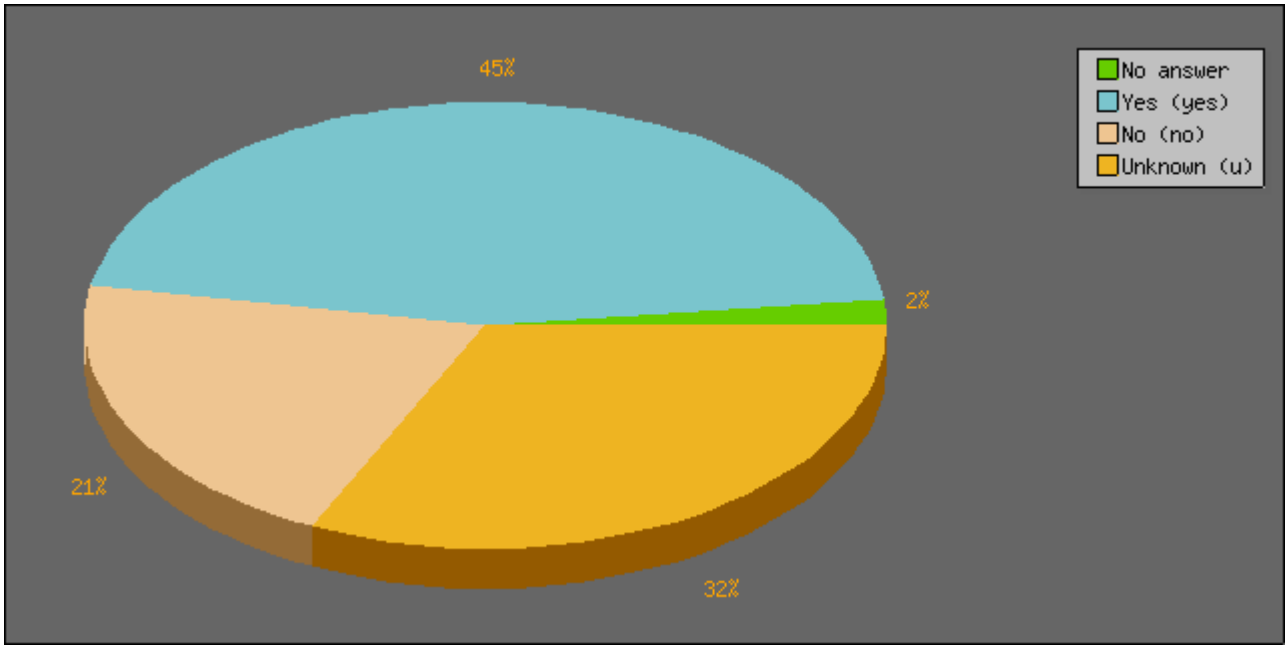
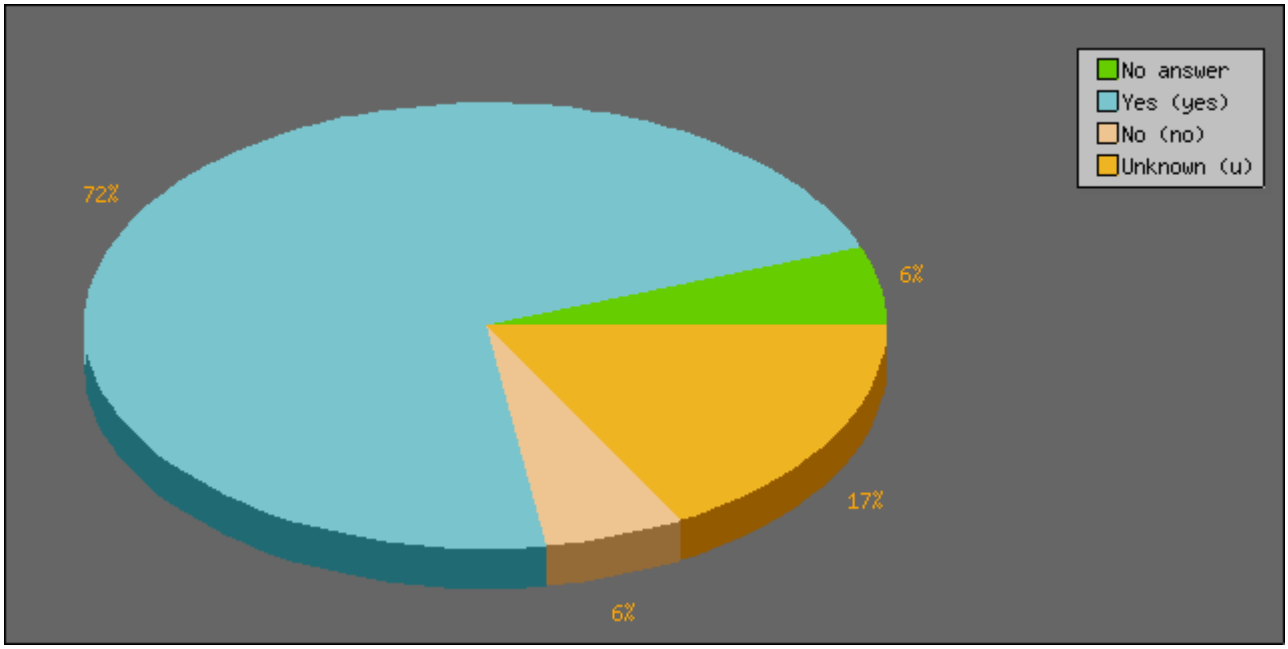
Field Summary for 4.16.2:		
Were triage and pre-hospital patients successfully tracked?		
Answer	**Count**	**Percentage**
No answer	1	1.89%
Yes (yes)	24	45.28%
No (no)	11	20.75%
Unknown (u)	17	32.08%

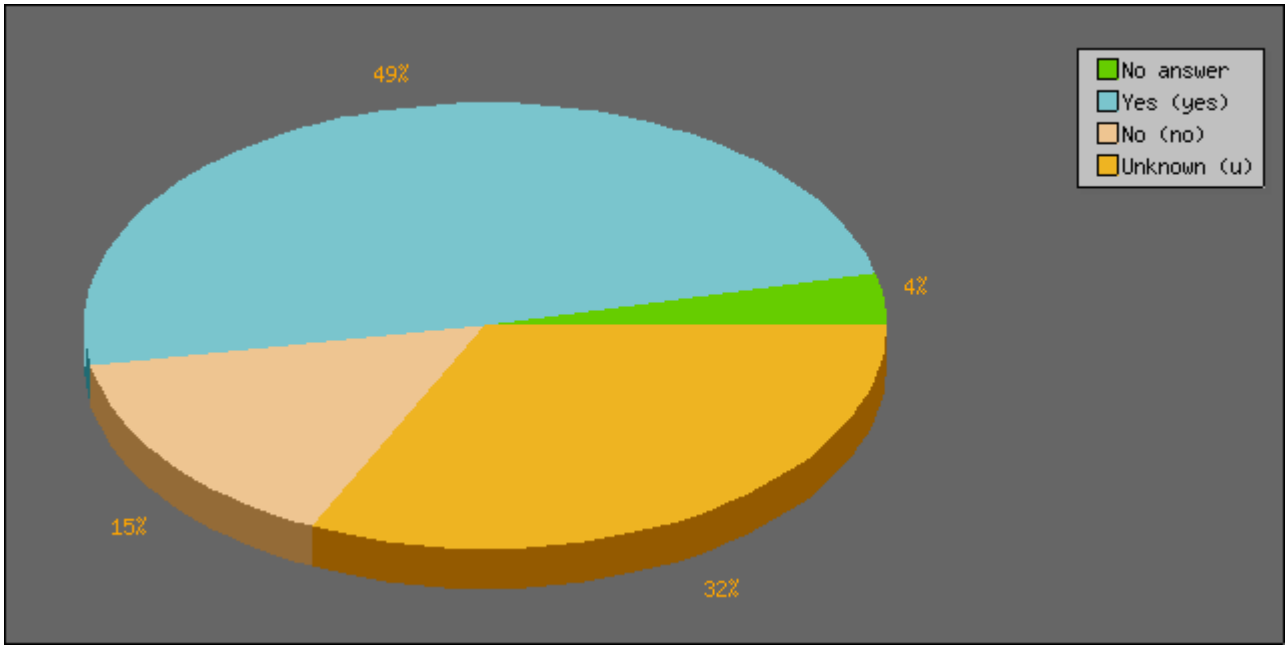


Field Summary for 4.16.3:		
Was PPE equipment available to first responders and medical response personnel?		
Answer	**Count**	**Percentage**
No answer	3	5.66%
Yes (yes)	38	71.70%
No (no)	3	5.66%
Unknown (u)	9	16.98%



****

Field Summary for 4.16.4:		
Was the ability to track where patients were transported available?		
Answer	**Count**	**Percentage**
No answer	2	3.77%
Yes (yes)	26	49.06%
No (no)	8	15.09%
Unknown (u)	17	32.08%



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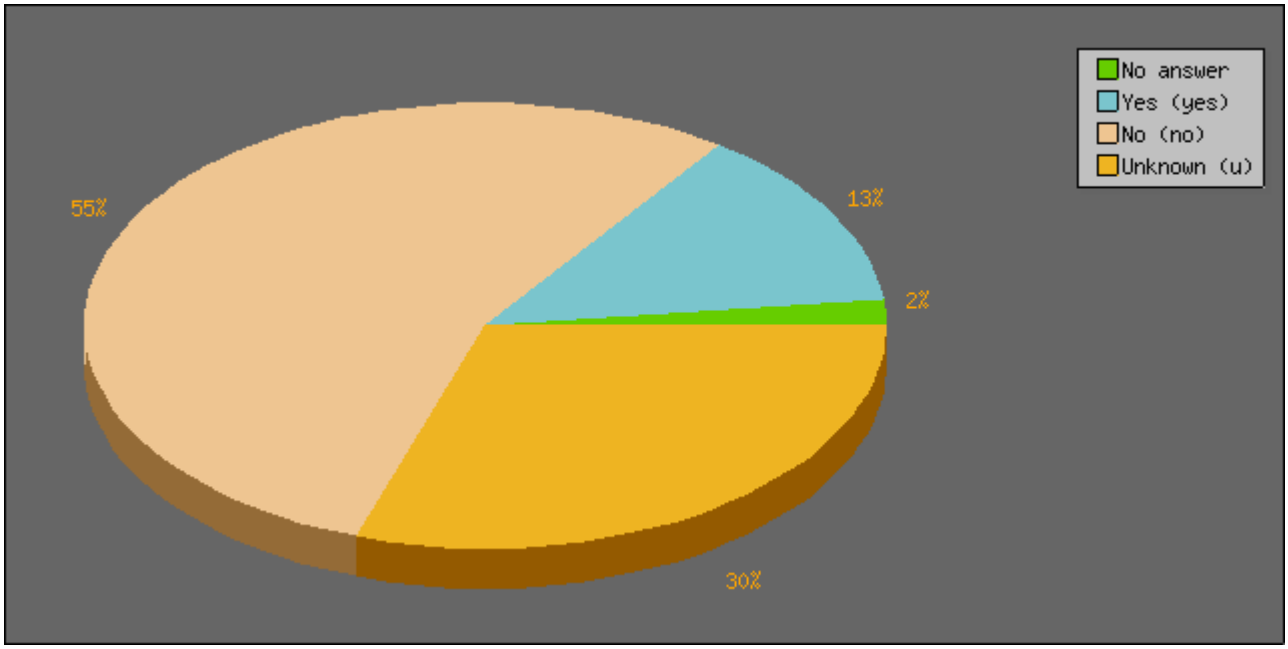
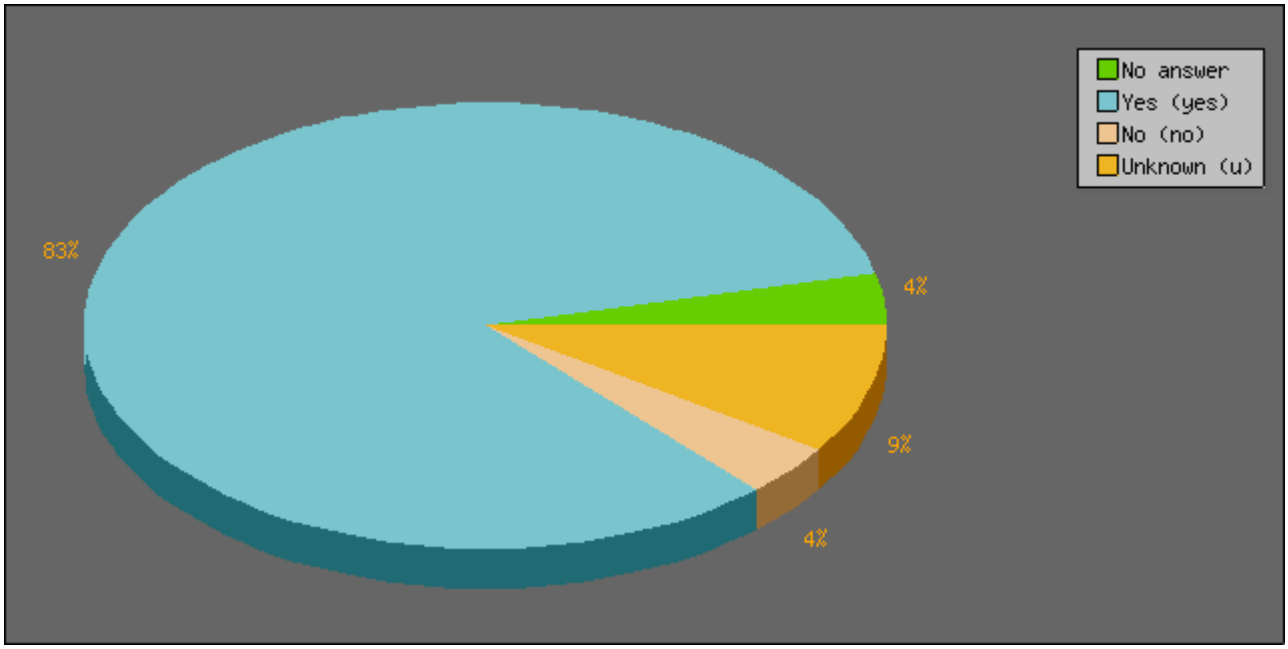
Field Summary for 4.16.5:		
Did any patients require decontamination?		
Answer	**Count**	**Percentage**
No answer	1	1.89%
Yes (yes)	7	13.21%
No (no)	29	54.72%
Unknown (u)	16	30.19%



Field Summary for 4.16.6:		
Were patients appropriately triaged?		
Answer	**Count**	**Percentage**
No answer	2	3.77%
Yes (yes)	44	83.02%
No (no)	2	3.77%
Unknown (u)	5	9.43%



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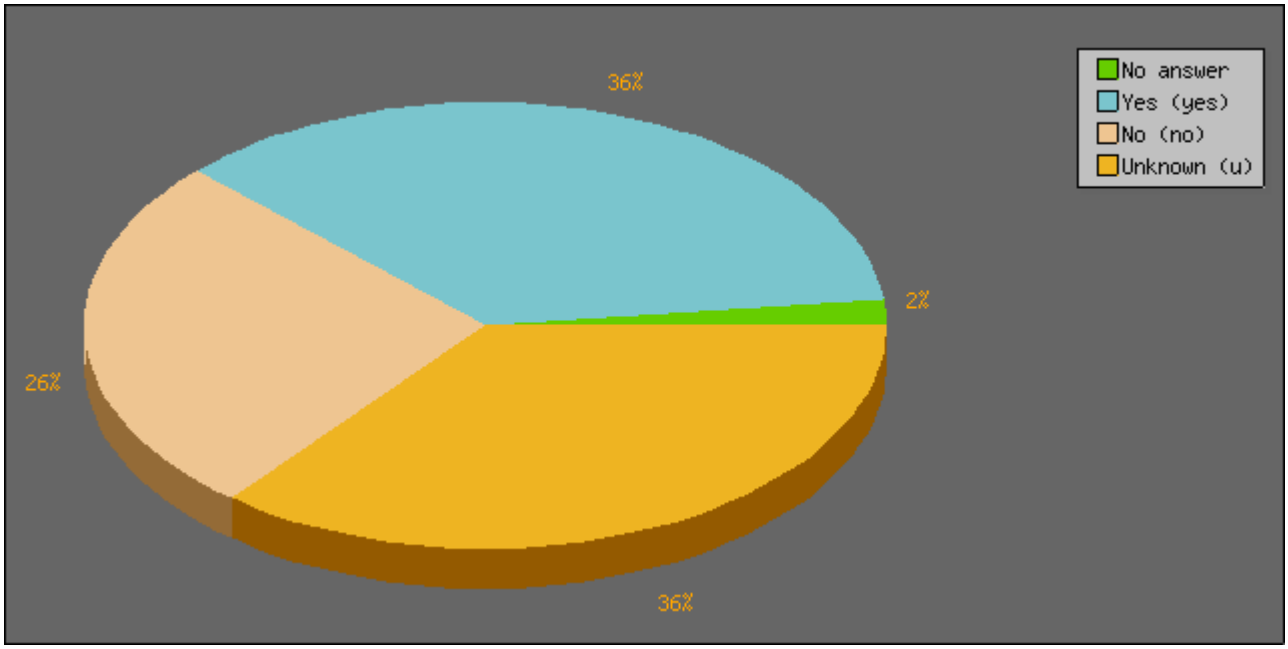
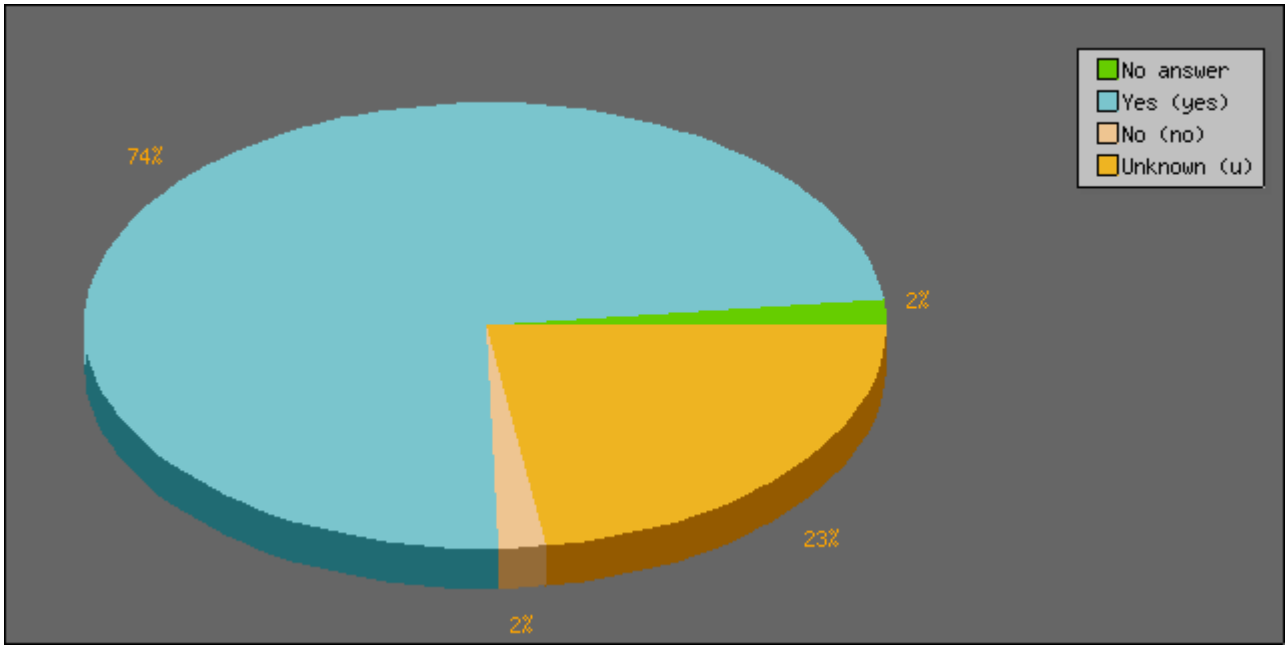
Field Summary for 4.16.7:		
Did triaged patients require re-triaging?		
Answer	**Count**	**Percentage**
No answer	1	1.89%
Yes (yes)	19	35.85%
No (no)	14	26.42%
Unknown (u)	19	35.85%

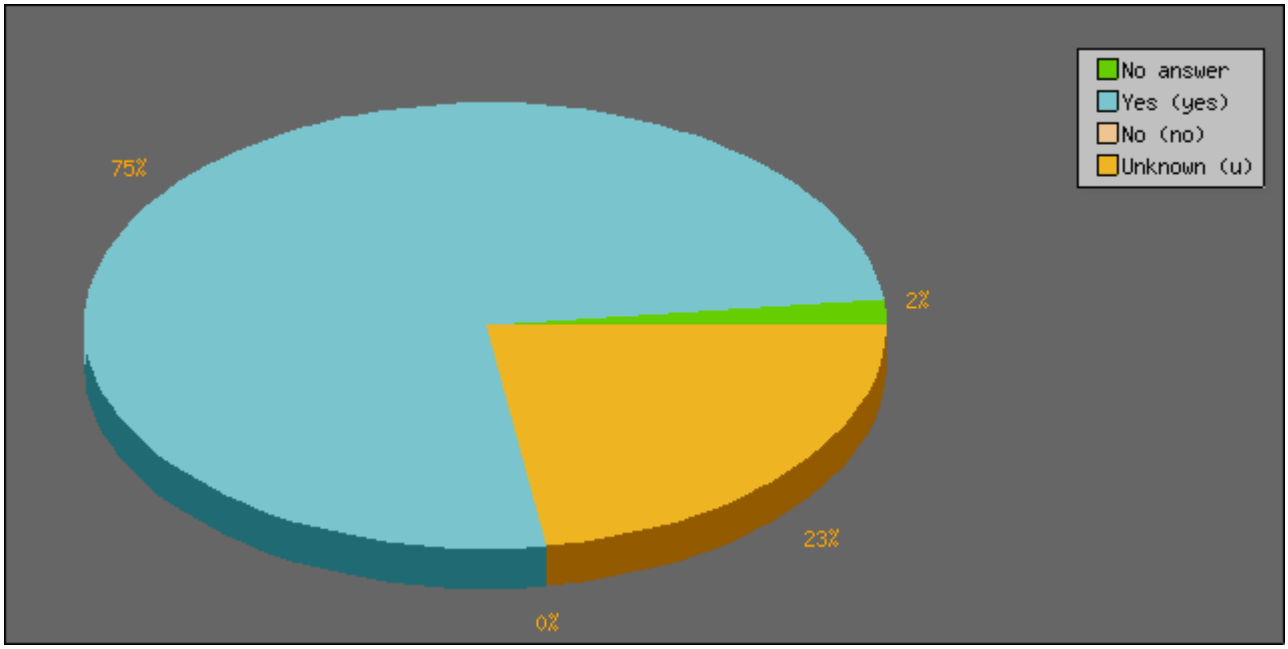


****

Field Summary for 4.16.9:		
Was triaging completed in an adequate amount of time?		
Answer	**Count**	**Percentage**
No answer	1	1.89%
Yes (yes)	39	73.58%
No (no)	1	1.89%
Unknown (u)	12	22.64%



Field Summary for 4.16.10:		
Was patient stabilization completed in an adequate amount of time?		
Answer	**Count**	**Percentage**
No answer	1	1.89%
Yes (yes)	40	75.47%
No (no)	0	0.00%
Unknown (u)	12	22.64%



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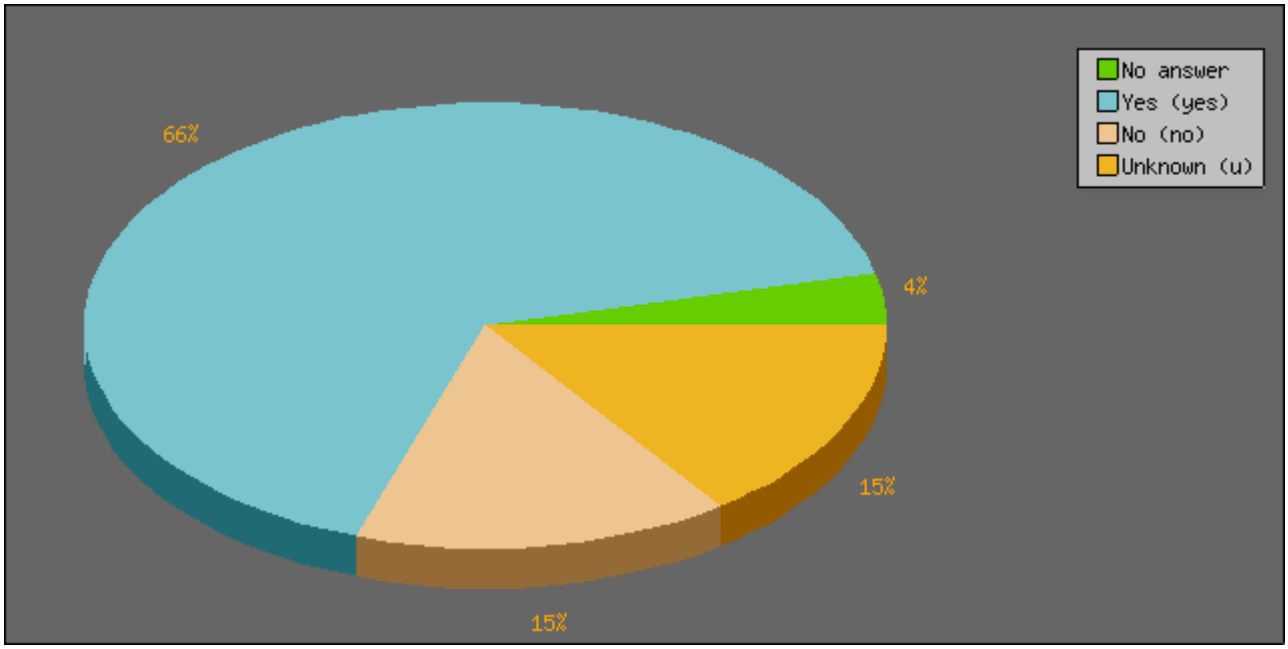
Field Summary for 4.16.11:		
Were mutual aid and interfaculty ambulances utilized as needed?		
Answer	**Count**	**Percentage**
No answer	2	3.77%
Yes (yes)	35	66.04%
No (no)	8	15.09%
Unknown (u)	8	15.09%



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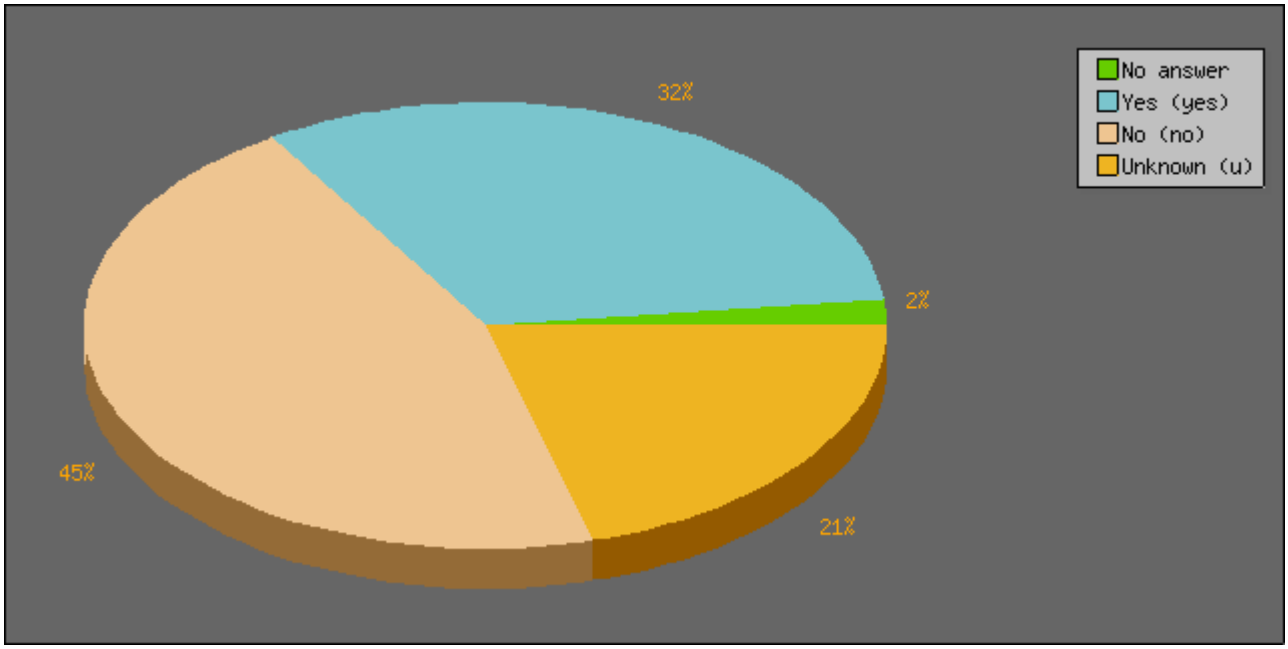
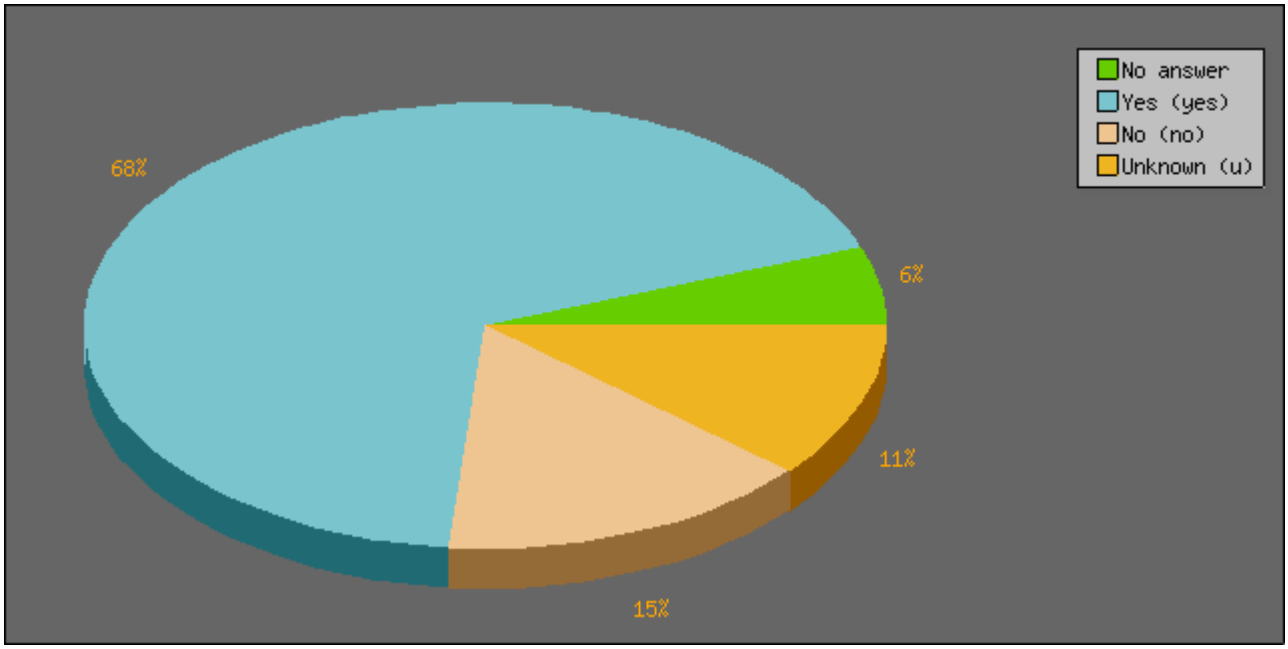
Field Summary for 4.16.12:		
Did communication interoperability exist for all responders?		
Answer	**Count**	**Percentage**
No answer	1	1.89%
Yes (yes)	17	32.08%
No (no)	24	45.28%
Unknown (u)	11	20.75%



Field Summary for 4.16.13:		
Was evacuation and patient re-location implemented using ambulances?		
Answer	**Count**	**Percentage**
No answer	3	5.66%
Yes (yes)	36	67.92%
No (no)	8	15.09%
Unknown (u)	6	11.32%



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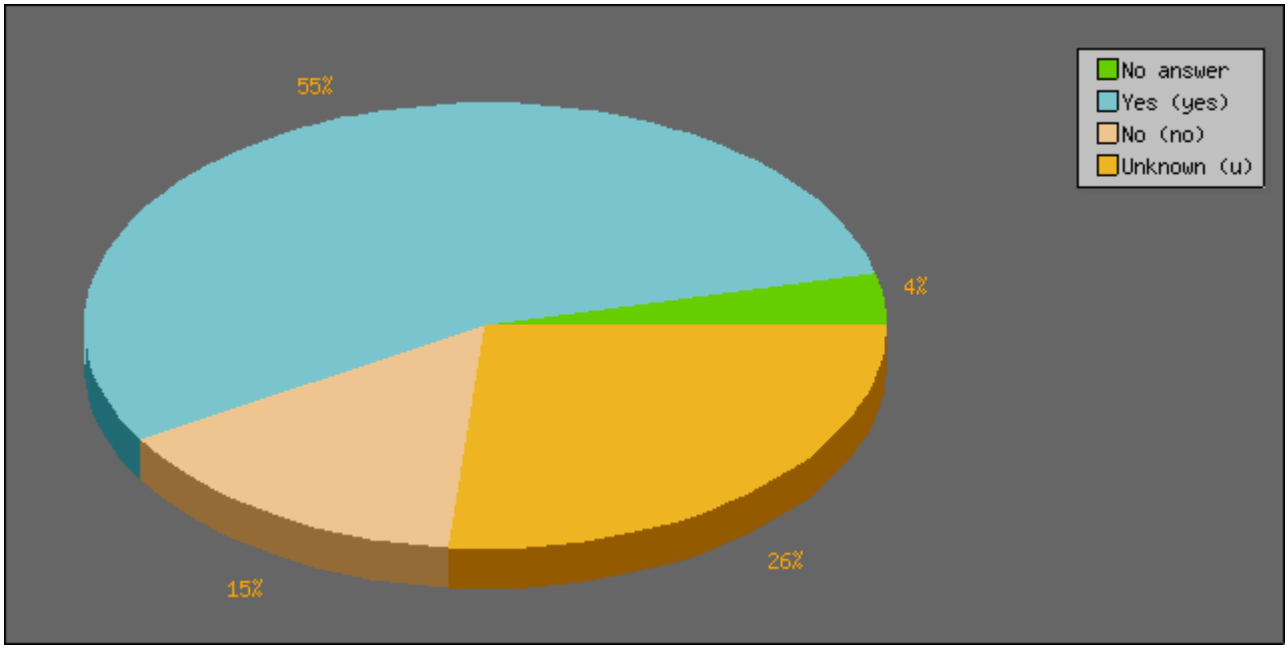
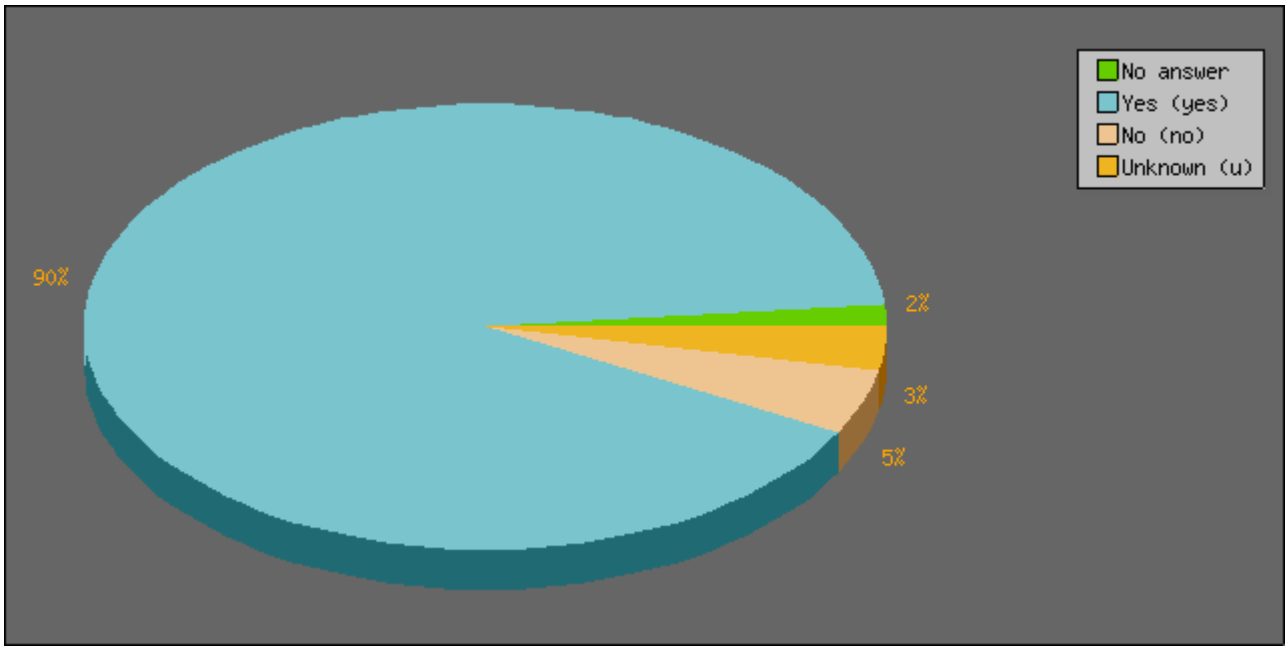
Field Summary for 4.16.14:		
Was the evacuation or relocation of patients effective?		
Answer	**Count**	**Percentage**
No answer	2	3.77%
Yes (yes)	29	54.72%
No (no)	8	15.09%
Unknown (u)	14	26.42%



Field Summary for 4.17.0:		
Were you a part of Medical Surge (Provide Medical Care)?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (Y)	63	100.00%
No (N)	0	0.00%

Field Summary for 4.17.3:		
Personnel demonstrated competencies defined by their given healthcare professions to address diagnosis, treatment, and reporting?		
Answer	**Count**	**Percentage**
No answer	1	1.59%
Yes (yes)	57	90.48%
No (no)	3	4.76%
Unknown (u)	2	3.17%



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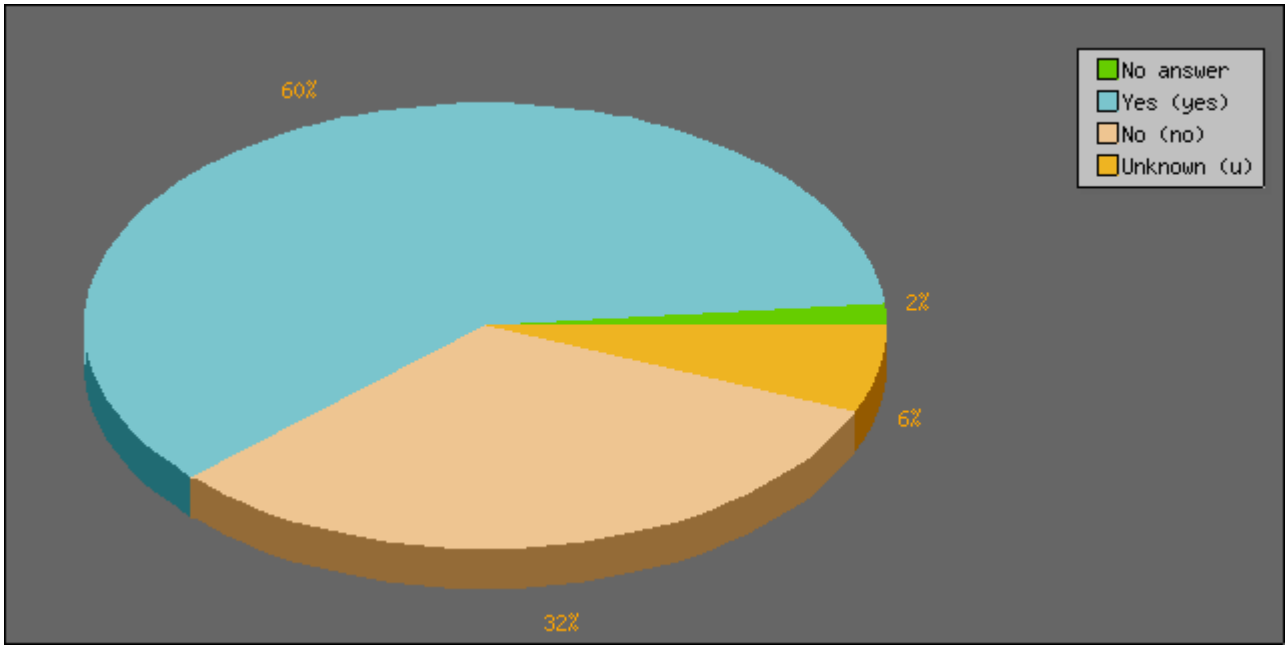
Field Summary for 4.17.4:		
Was the number of available personnel adequate to augment medical treatment facilities?		
Answer	**Count**	**Percentage**
No answer	1	1.59%
Yes (yes)	38	60.32%
No (no)	20	31.75%
Unknown (u)	4	6.35%



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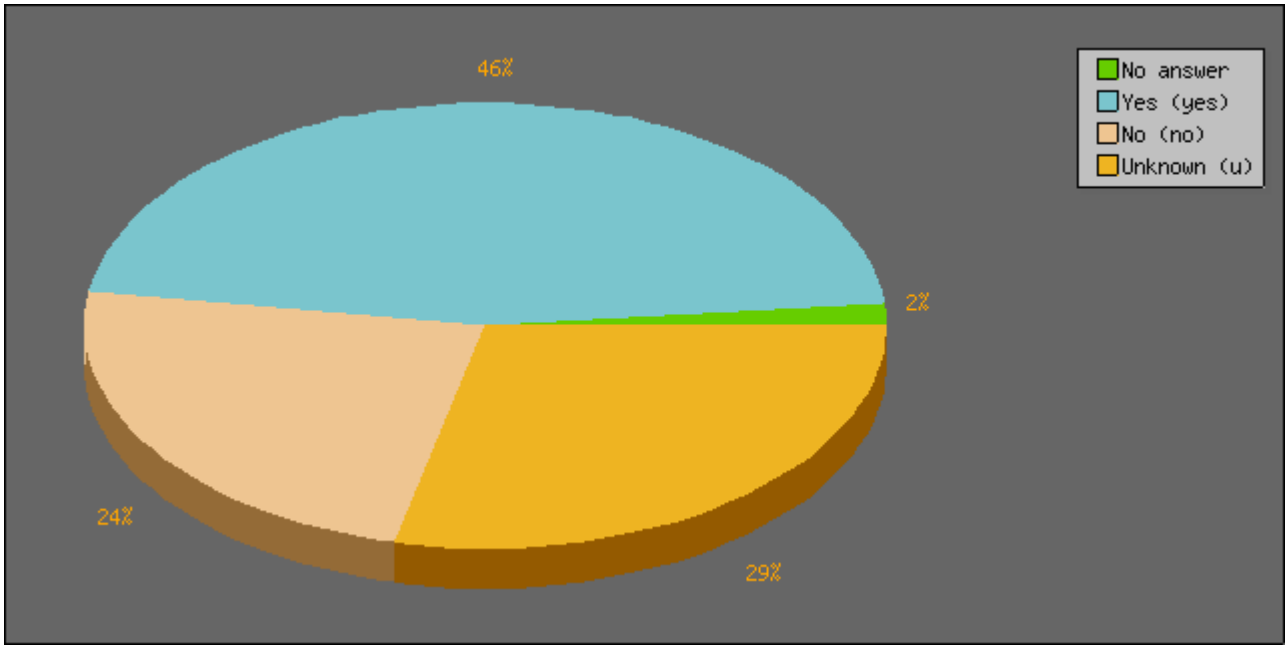
Field Summary for 4.17.5:		
Was the available number of beds adequate for various casualty categories (e.g. ICU, PEDs, general, burn)?		
Answer	**Count**	**Percentage**
No answer	1	1.59%
Yes (yes)	29	46.03%
No (no)	15	23.81%
Unknown (u)	18	28.57%



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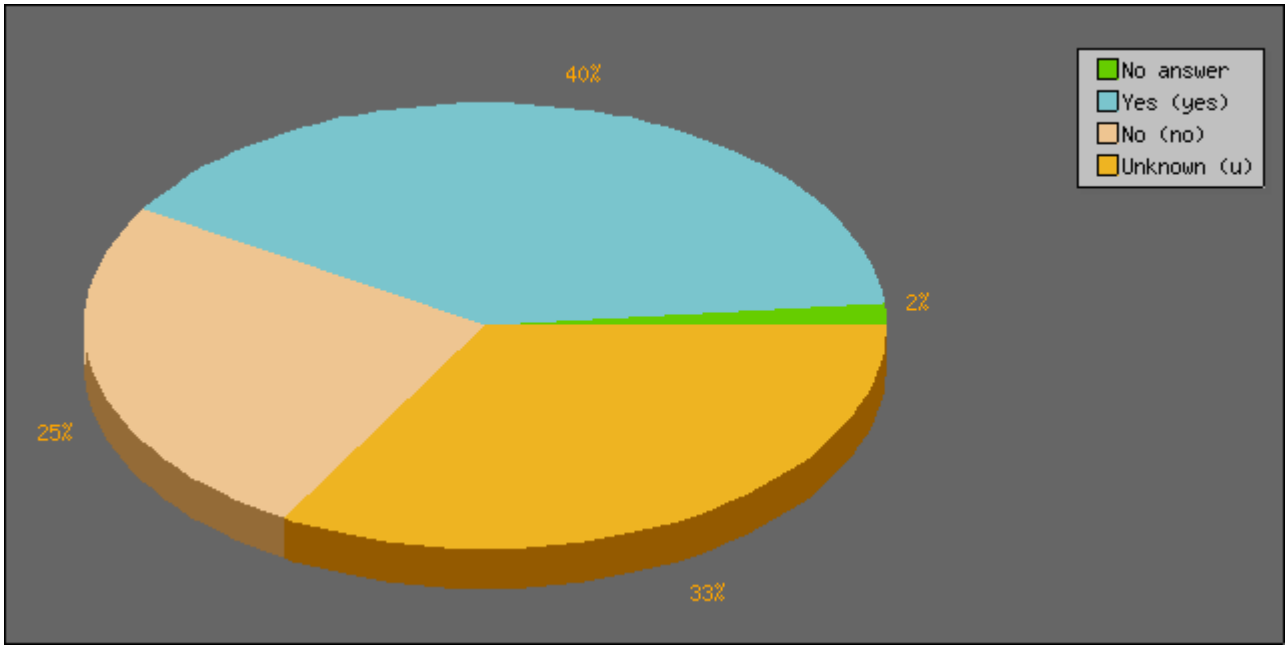
Field Summary for 4.17.6:		
Was the number of alternate care centers established adequate?		
Answer	**Count**	**Percentage**
No answer	1	1.59%
Yes (yes)	25	39.68%
No (no)	16	25.40%
Unknown (u)	21	33.33%



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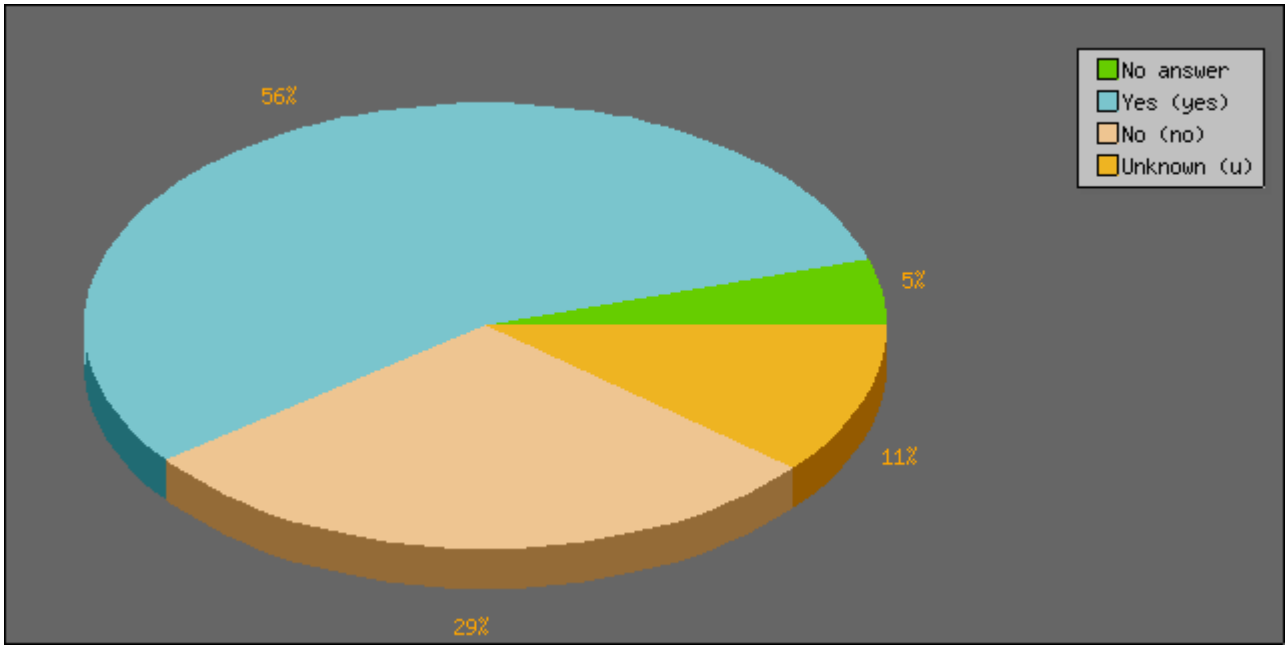
Field Summary for 4.17.7:		
Were the amount of supplies, pharmaceuticals, and equipment adequate to effectively support a facility's reported surge capacity?		
Answer	**Count**	**Percentage**
No answer	3	4.76%
Yes (yes)	35	55.56%
No (no)	18	28.57%
Unknown (u)	7	11.11%



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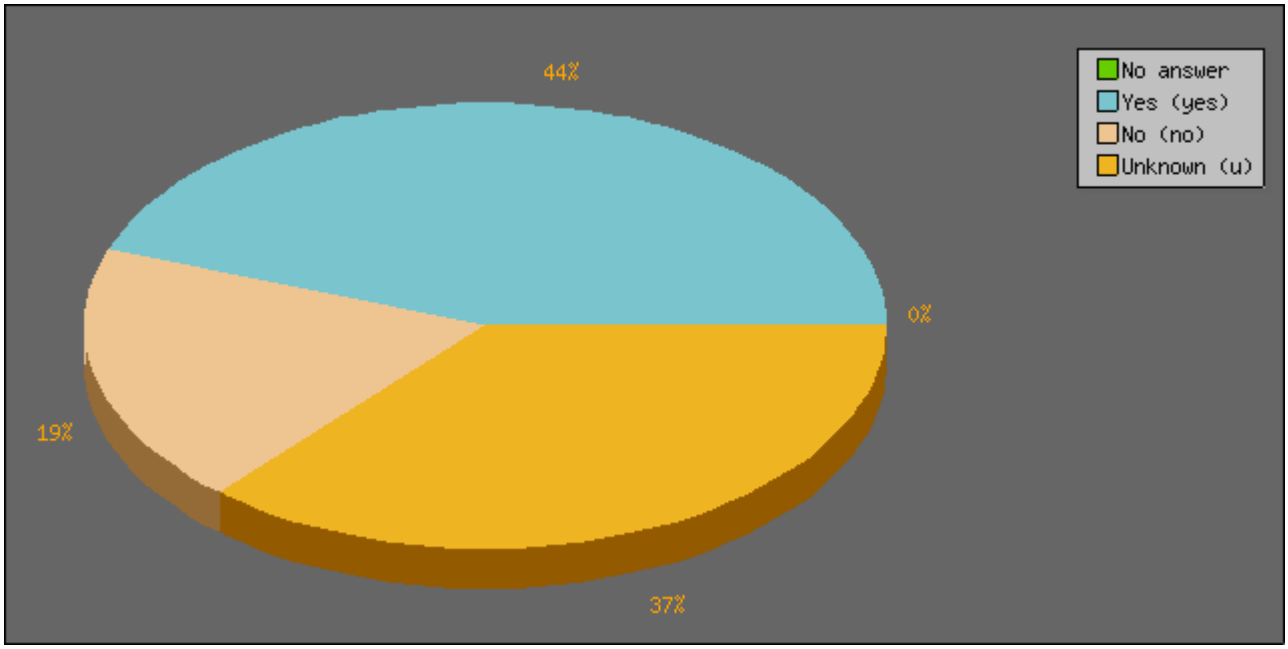
Field Summary for 4.17.8:		
Were patients successfully tracked?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	28	44.44%
No (no)	12	19.05%
Unknown (u)	23	36.51%



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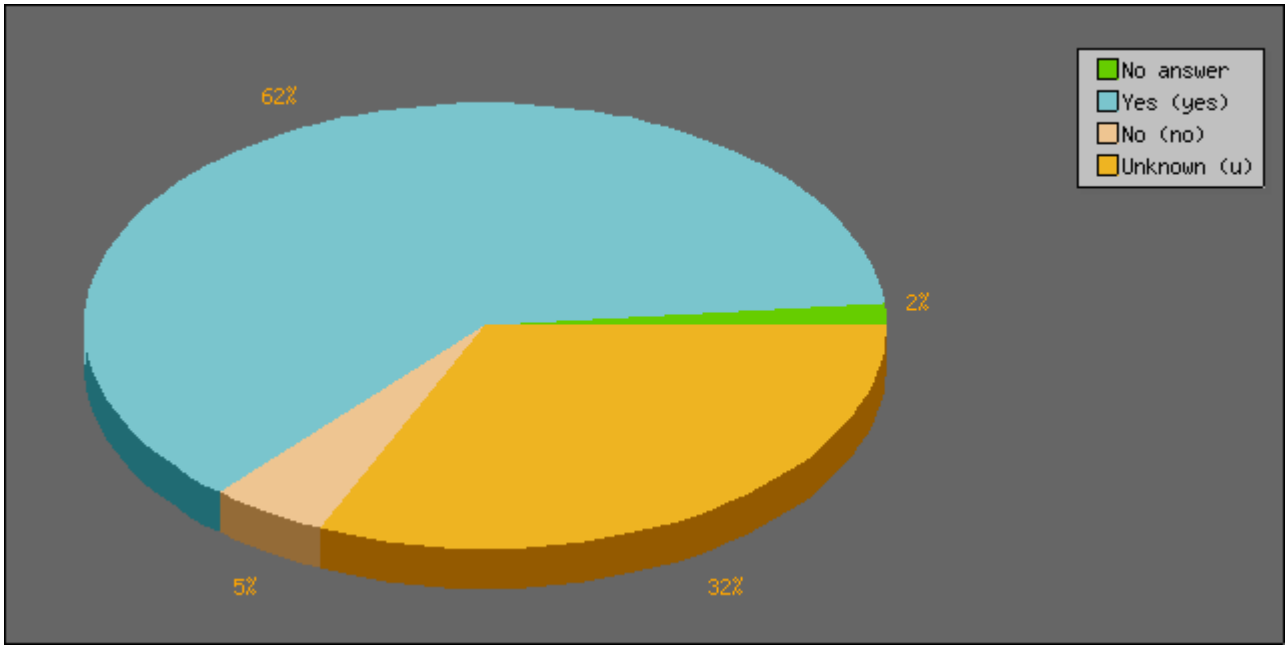
Field Summary for 4.17.9:		
Was PPE available to staff for the surge of patients encountered?		
Answer	**Count**	**Percentage**
No answer	1	1.59%
Yes (yes)	39	61.90%
No (no)	3	4.76%
Unknown (u)	20	31.75%



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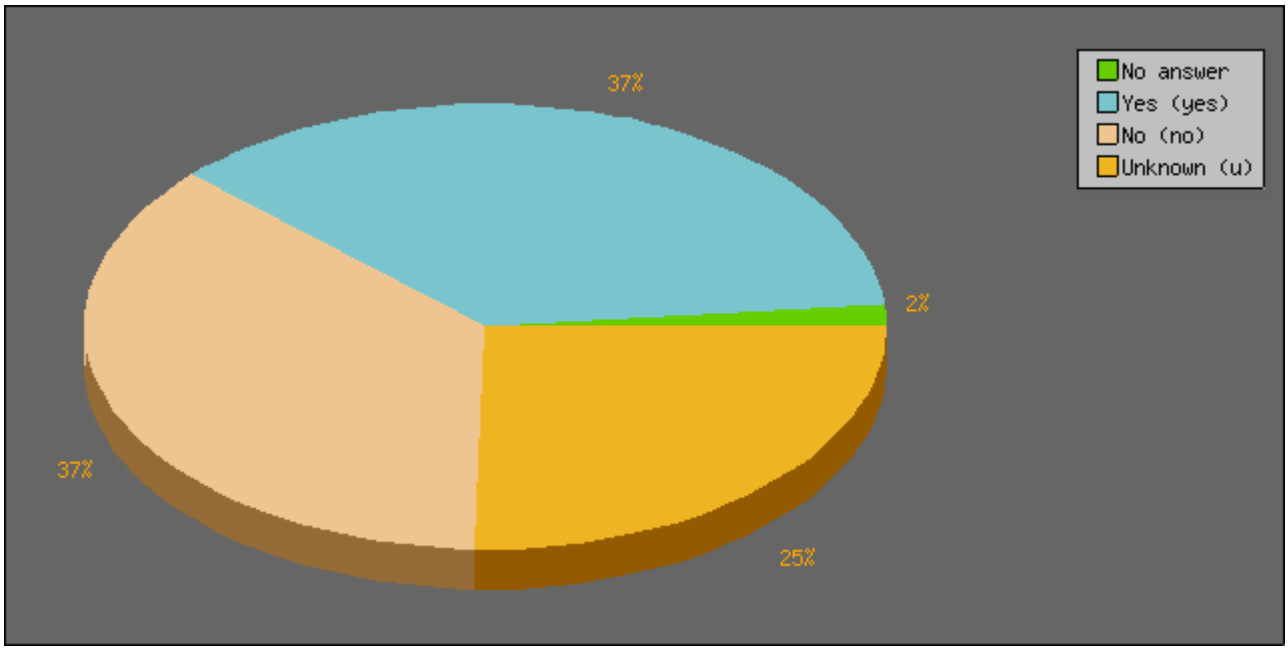
Field Summary for 4.17.11:		
Was the number of functional hospitals available adequate to support the incident?		
Answer	**Count**	**Percentage**
No answer	1	1.59%
Yes (yes)	23	36.51%
No (no)	23	36.51%
Unknown (u)	16	25.40%



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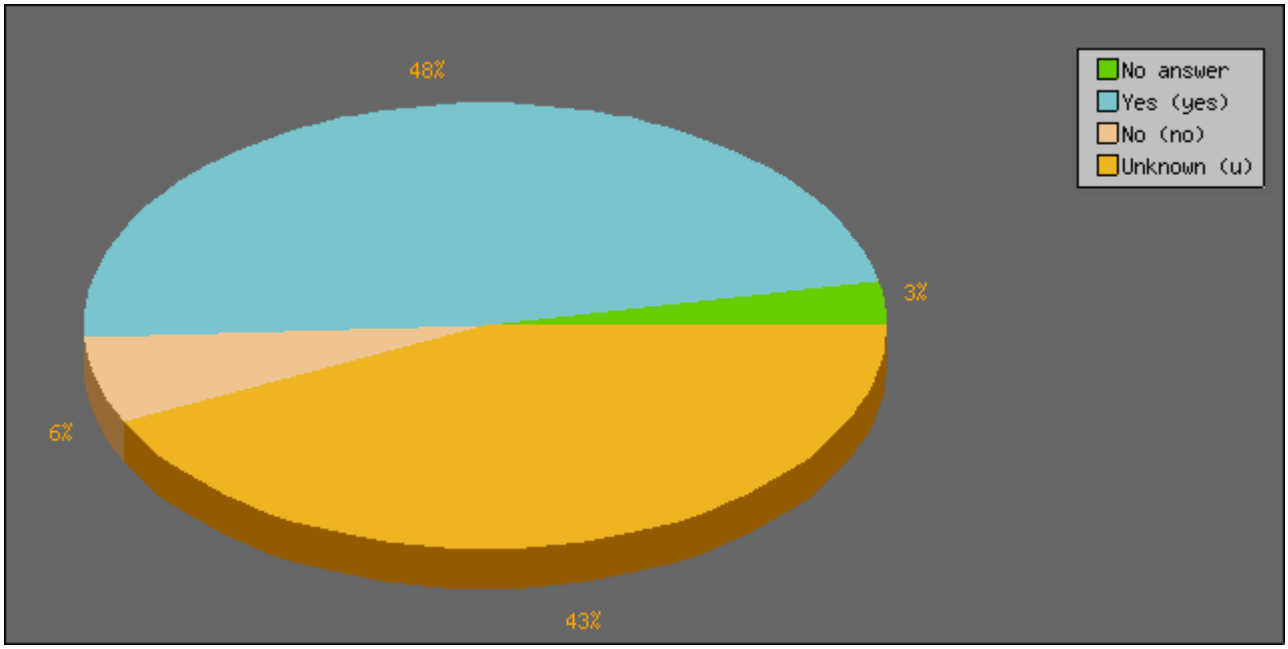
Field Summary for 4.17.12:		
Did medical facilities have a plan for evacuation or decompression?		
Answer	**Count**	**Percentage**
No answer	2	3.17%
Yes (yes)	30	47.62%
No (no)	4	6.35%
Unknown (u)	27	42.86%



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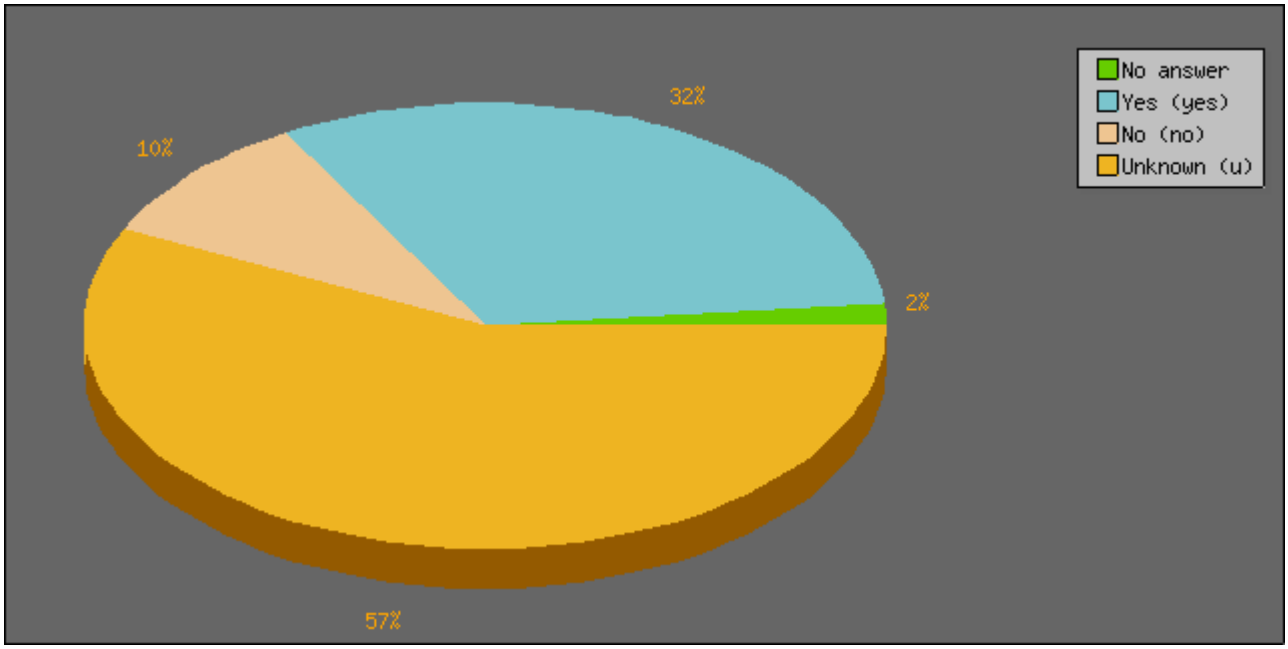
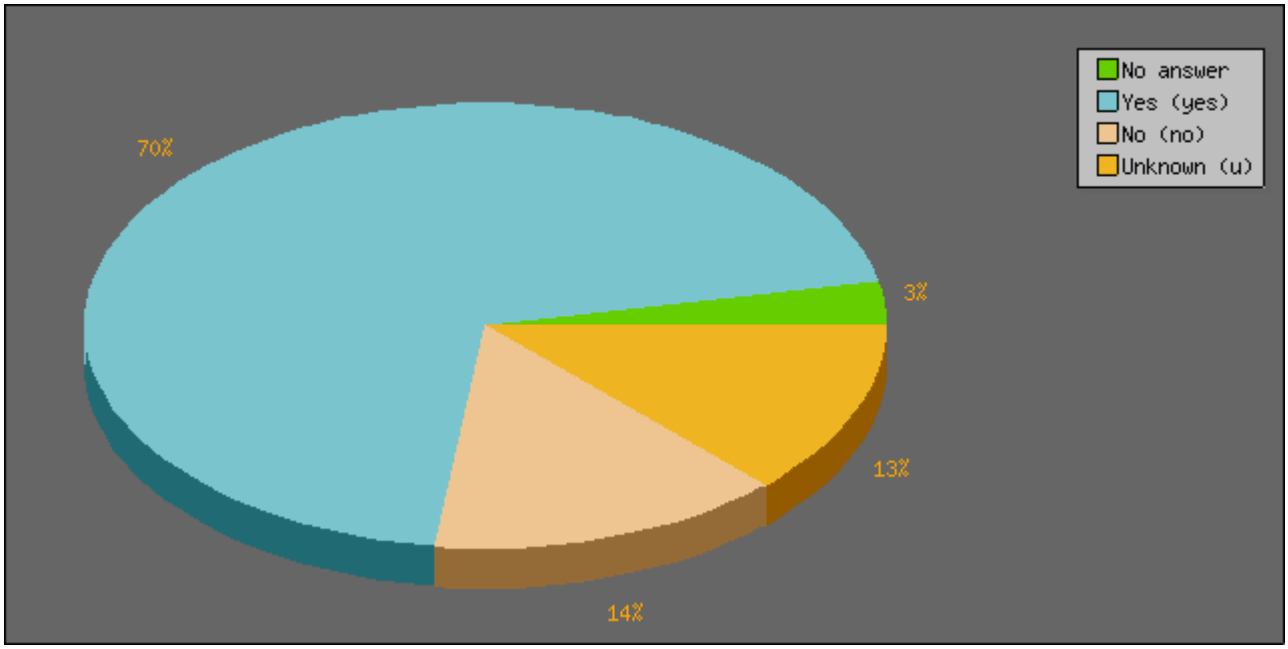
Field Summary for 4.17.13:		
Were evacuation or decompression plans effective?		
Answer	**Count**	**Percentage**
No answer	1	1.59%
Yes (yes)	20	31.75%
No (no)	6	9.52%
Unknown (u)	36	57.14%



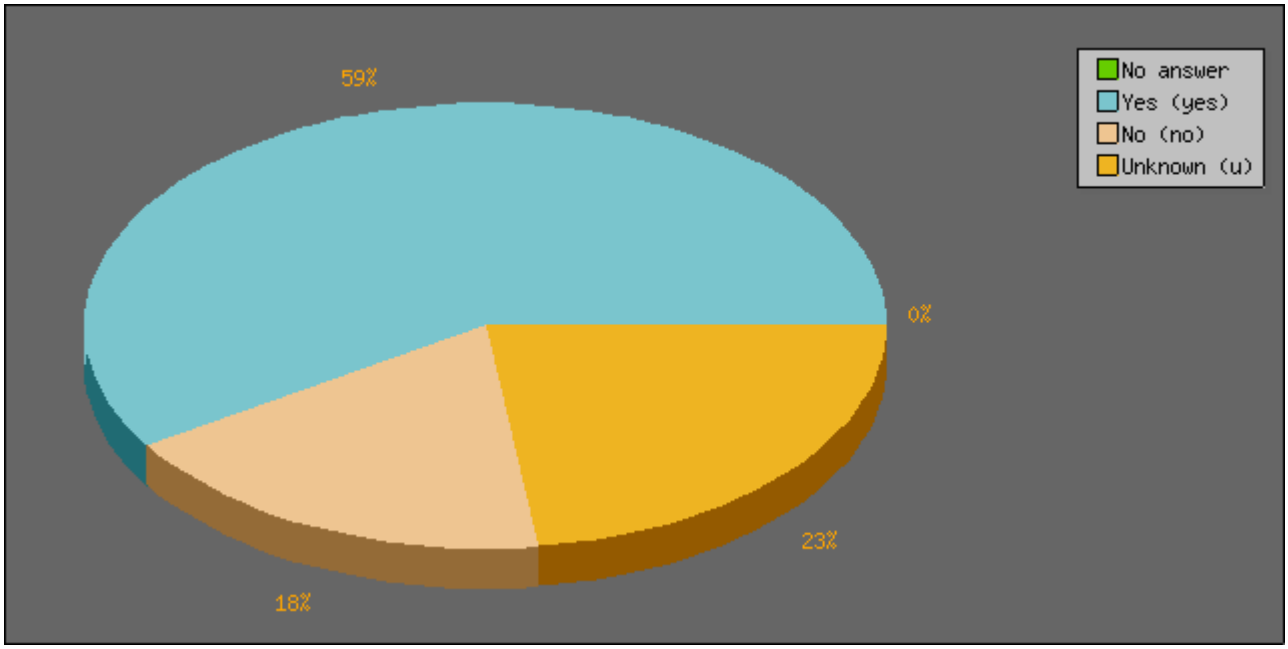
Field Summary for 4.17.14:		
Was the standard of care able to be maintained during the event?		
Answer	**Count**	**Percentage**
No answer	2	3.17%
Yes (yes)	44	69.84%
No (no)	9	14.29%
Unknown (u)	8	12.70%



Field Summary for 4.18.0:		
Were you a part of Medical Supplies Management and Distribution (Provide Medical Care)?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (Y)	61	100.00%
No (N)	0	0.00%

****

Field Summary for 4.18.2:		
Was the time from the assessment of shortfalls to requests for needed supplies minimized (SNS)?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	36	59.02%
No (no)	11	18.03%
Unknown (u)	14	22.95%



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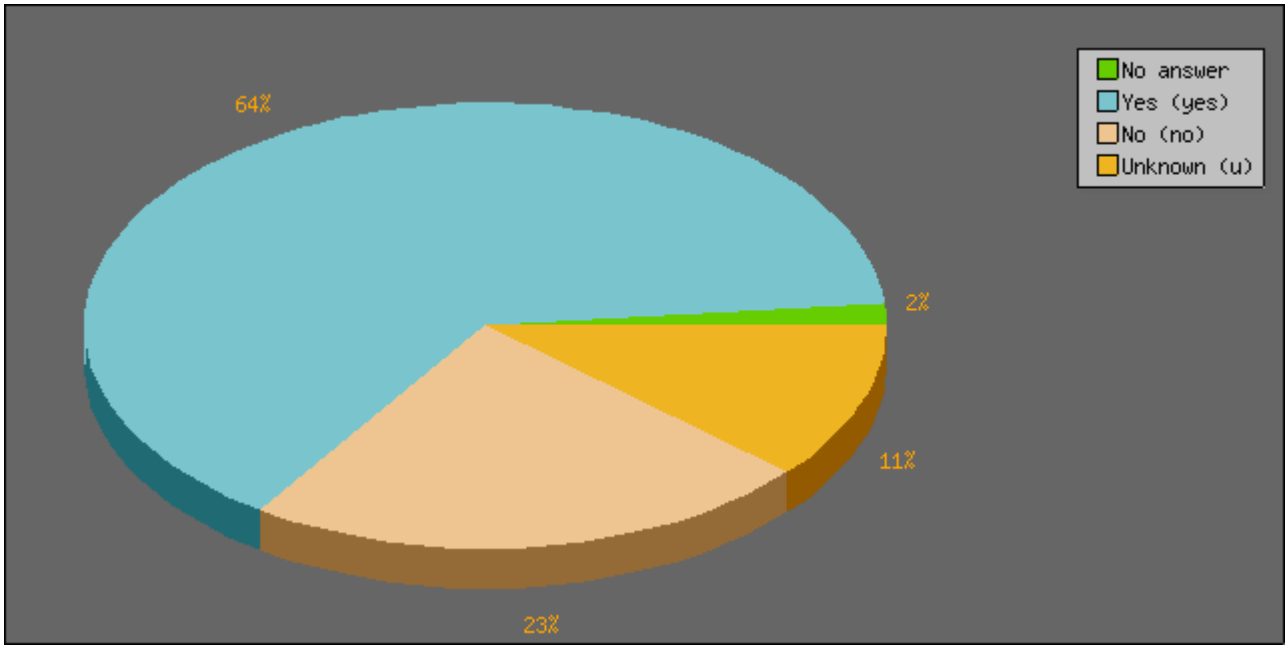
Field Summary for 4.18.3:		
Was the time from request to arrival of needed supplies minimal?		
Answer	**Count**	**Percentage**
No answer	1	1.64%
Yes (yes)	39	63.93%
No (no)	14	22.95%
Unknown (u)	7	11.48%



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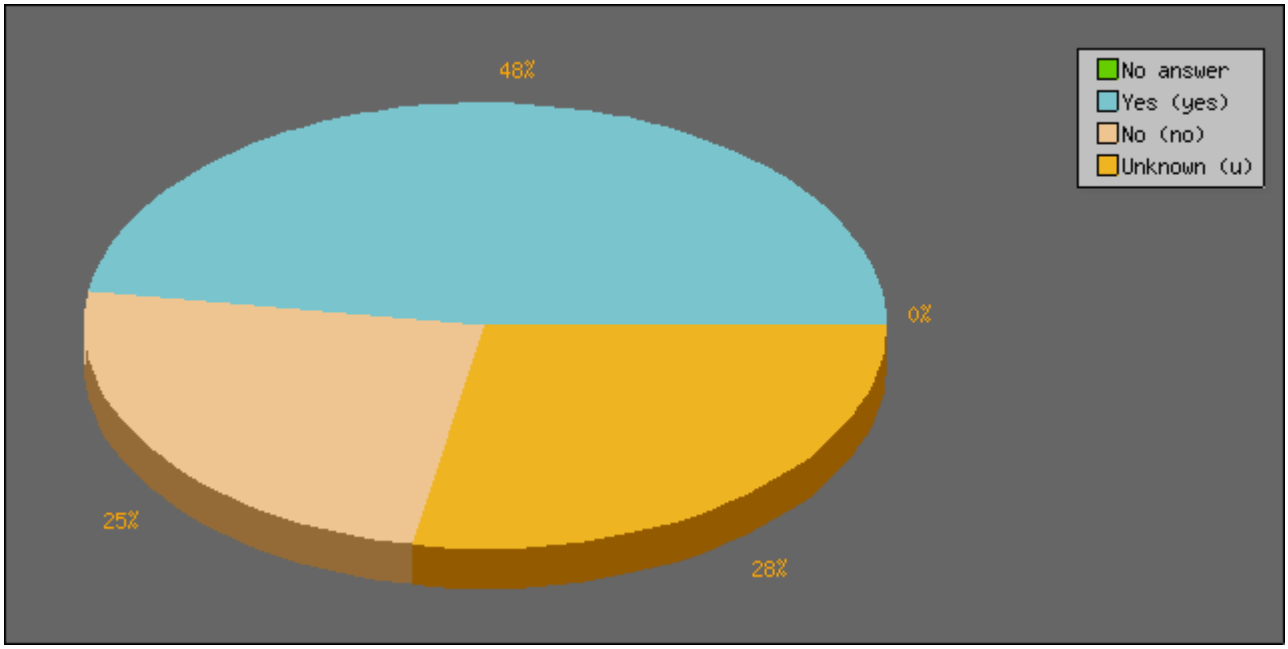
Field Summary for 4.18.5:		
Were special needs populations requirement successfully met?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	29	47.54%
No (no)	15	24.59%
Unknown (u)	17	27.87%



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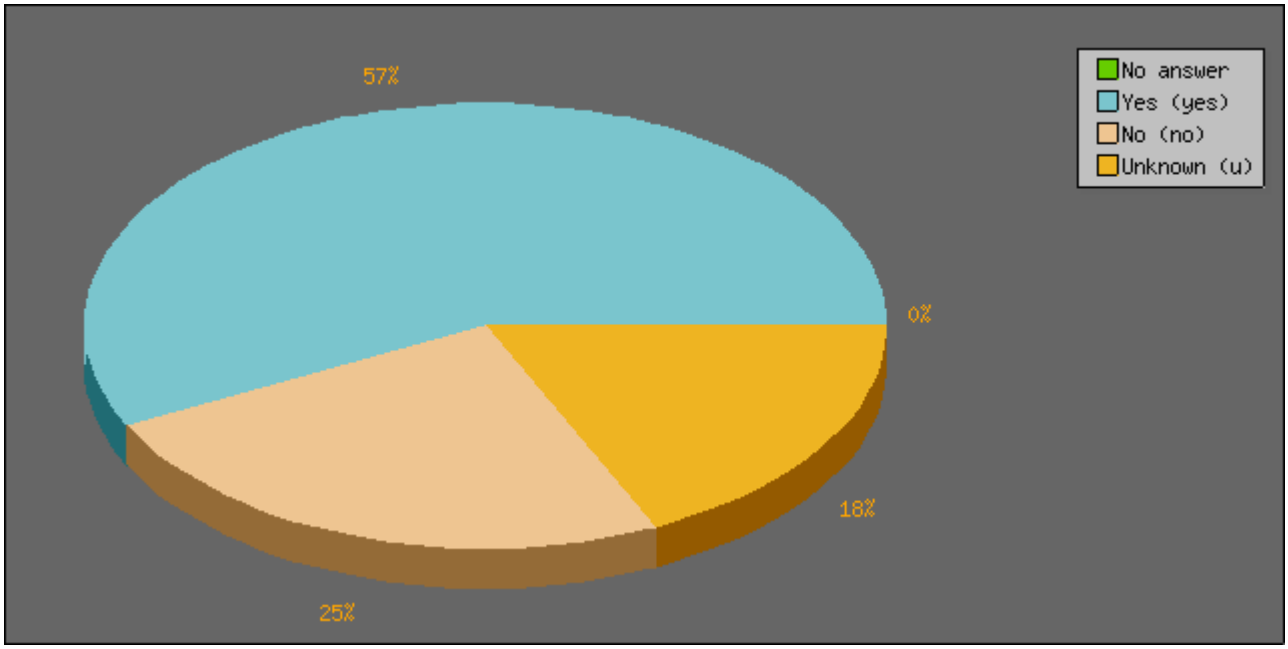
Field Summary for 4.18.6:		
Did the security provided meet the needs of the situation?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	35	57.38%
No (no)	15	24.59%
Unknown (u)	11	18.03%



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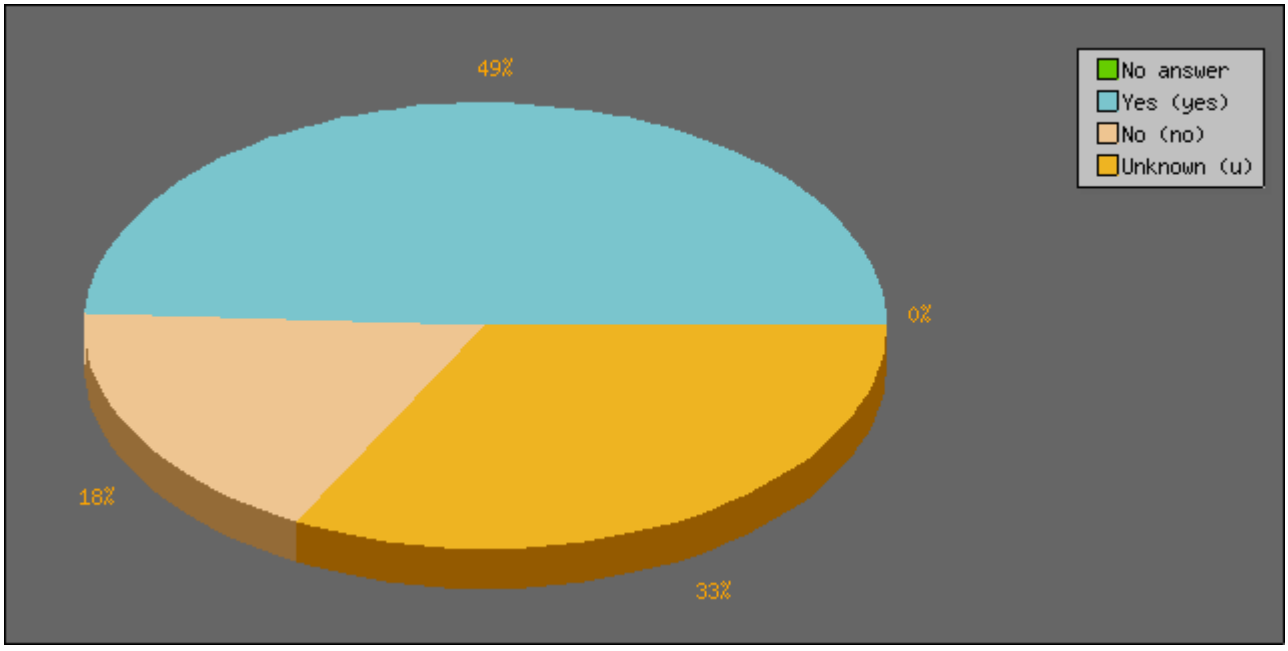
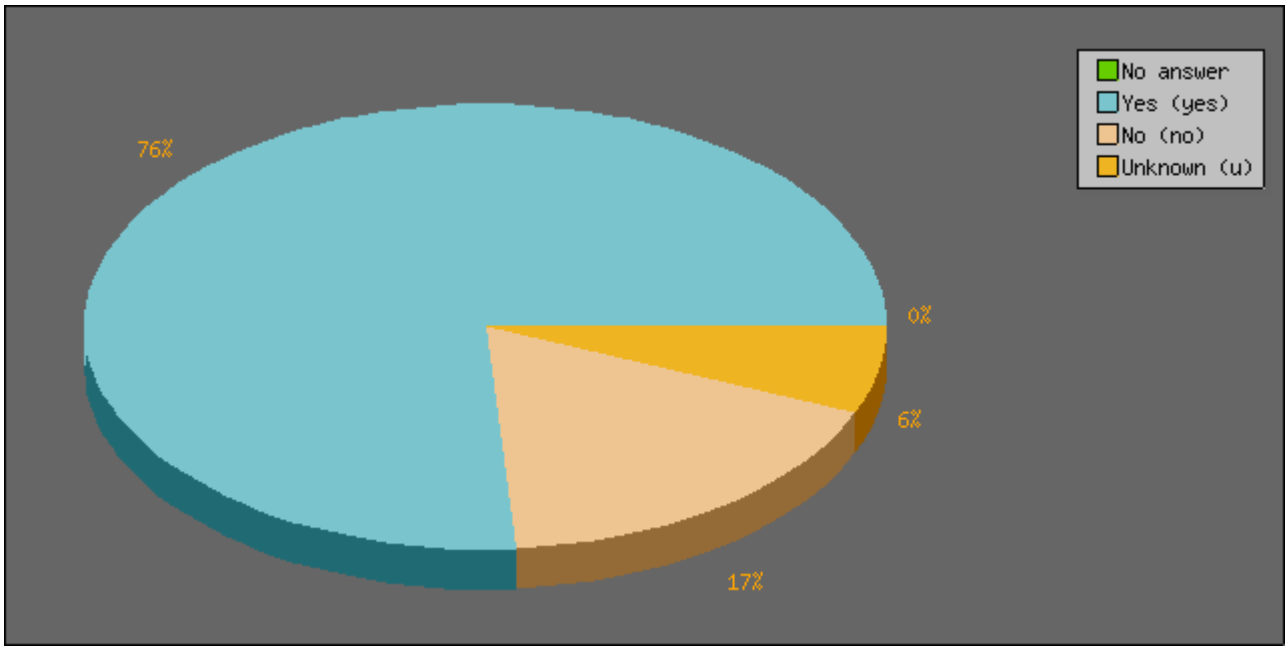
Field Summary for 4.18.9:		
Were state or regional assets or resources adequately relocated to support incidents?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	30	49.18%
No (no)	11	18.03%
Unknown (u)	20	32.79%



Field Summary for 4.19.0:		
Were you a part of Mass Prophylaxis (Distribute Prophylaxis)?		
Answer	Count	Percentage
No answer	0	0.00%
Yes (Y)	63	100.00%
No (N)	0	0.00%

Field Summary for 4.19.1:		
Were mass prophylaxis and vaccination plans successfully implemented?		
Answer	Count	Percentage
No answer	0	0.00%
Yes (yes)	48	76.19%
No (no)	11	17.46%
Unknown (u)	4	6.35%



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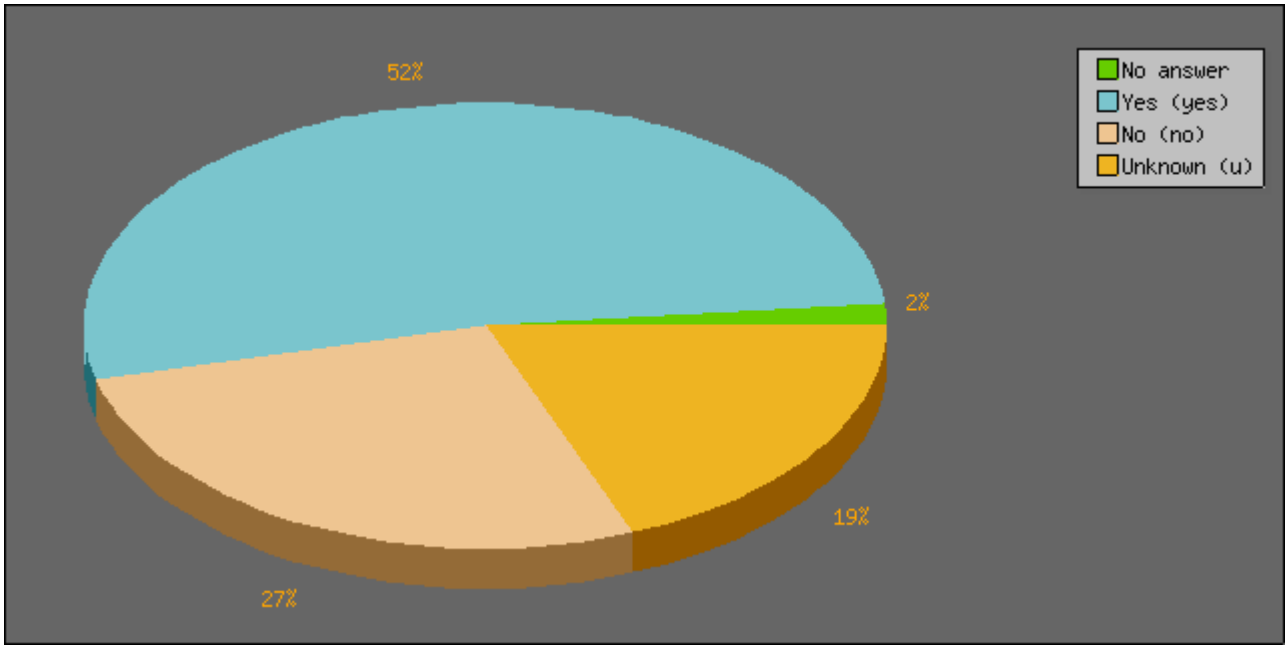
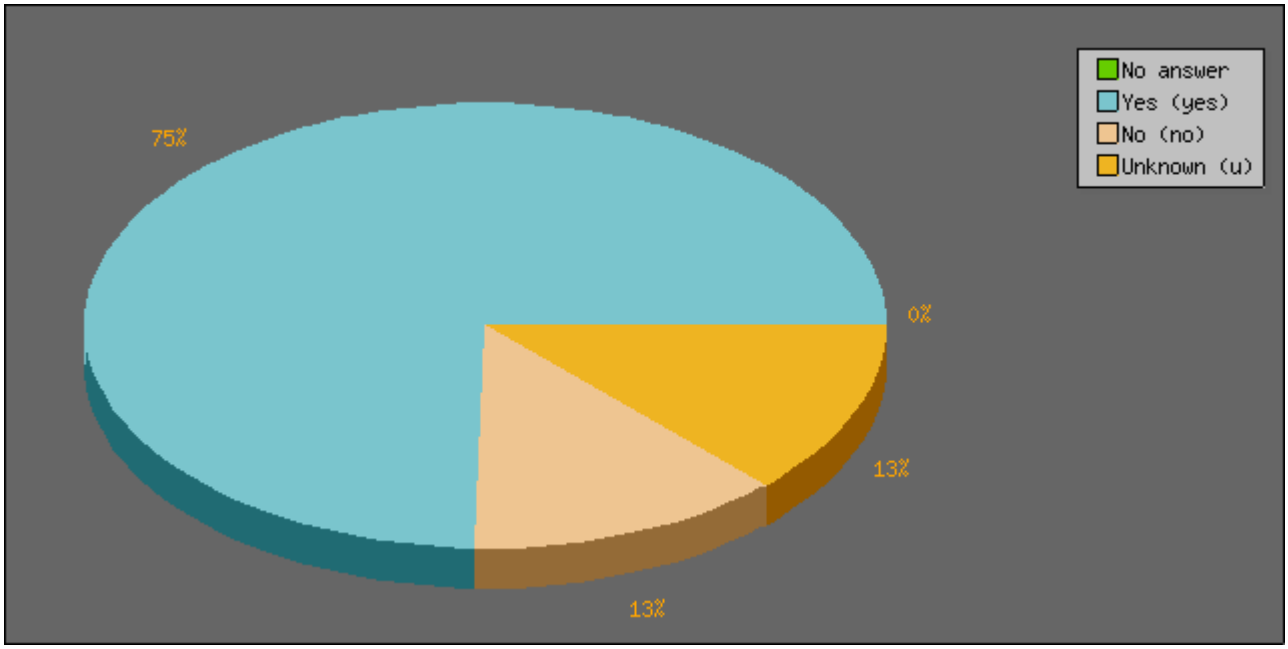
Field Summary for 4.19.2:		
Was accurate and timely public information made available through multiple channels and venues regarding the location of these sites?		
Answer	**Count**	**Percentage**
No answer	1	1.59%
Yes (yes)	33	52.38%
No (no)	17	26.98%
Unknown (u)	12	19.05%



Field Summary for 4.19.3:		
Were sufficient competent personnel available to staff dispensing centers and vaccination sites?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	47	74.60%
No (no)	8	12.70%
Unknown (u)	8	12.70%



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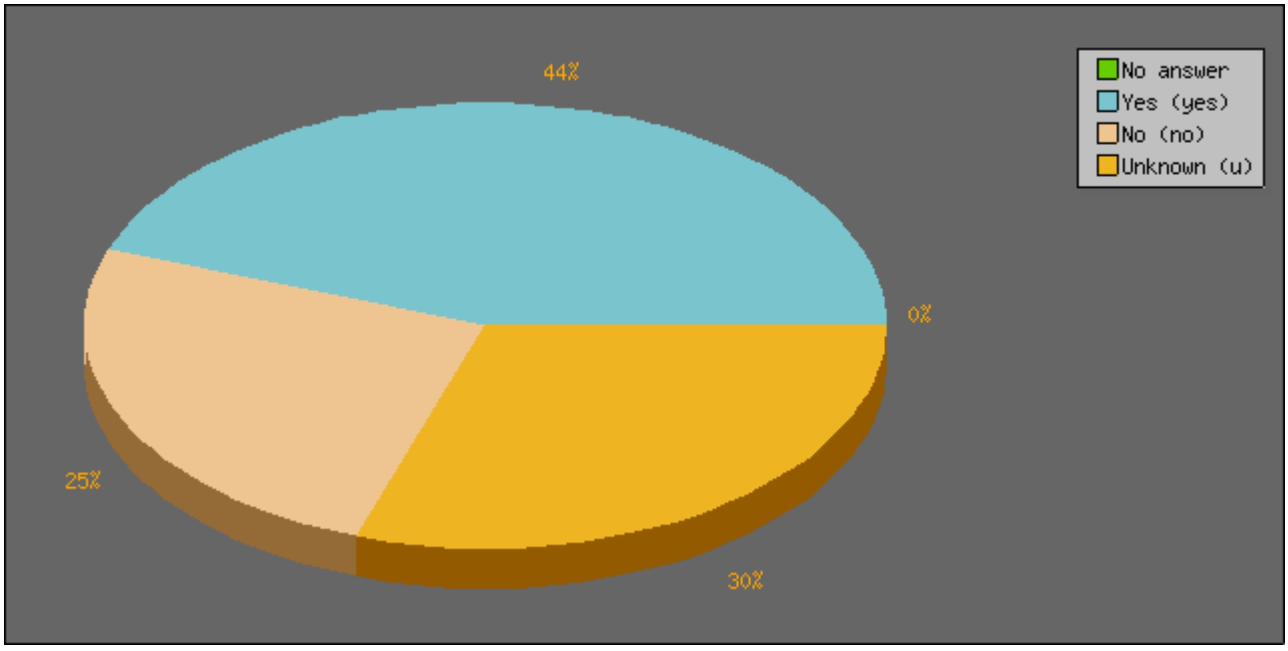
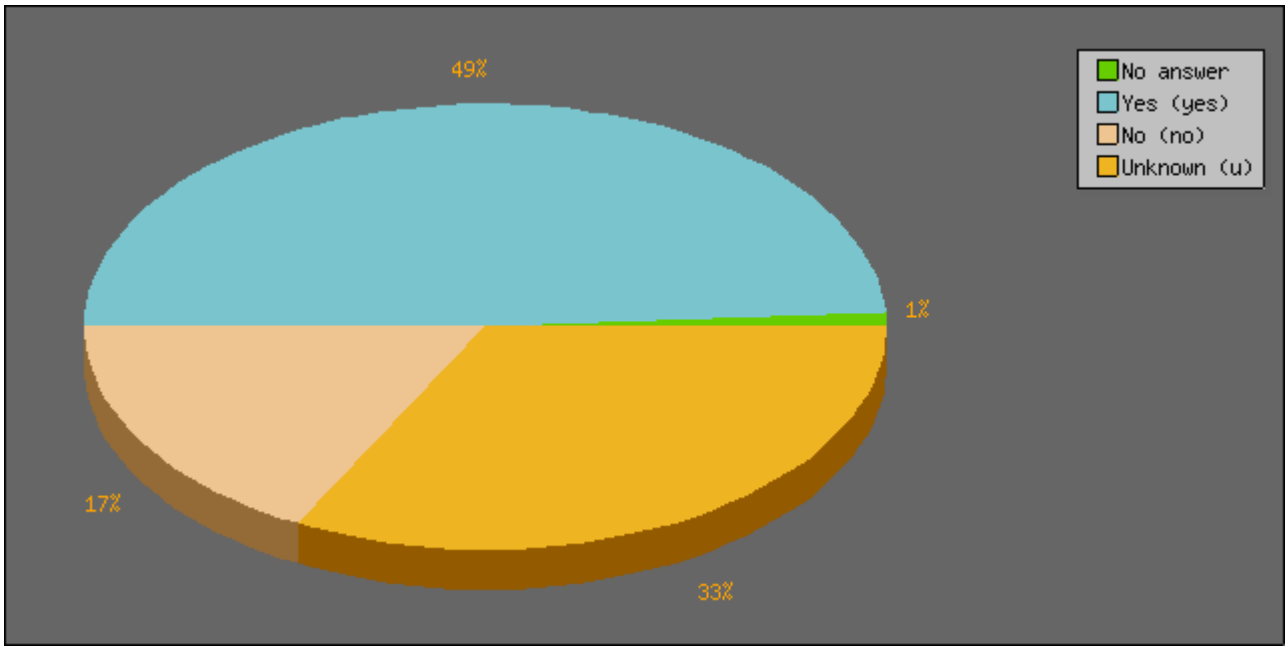
Field Summary for 4.19.6:		
Was a separate prophylaxis-dispensing site designated for responders and their families?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	28	44.44%
No (no)	16	25.40%
Unknown (u)	19	30.16%



Field Summary for 4.20.0:		
Were you a part of Mass Care (Sheltering, Feeding, and Related Services) (Provide Mass Care)?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (Y)	104	100.00%
No (N)	0	0.00%

****

Field Summary for 4.20.1/4/6:		
Did all shelter residents (including special needs) transition from shelter back to original home facility, alternative accommodations and/or interim housing prior to shelter closure?		
Answer	**Count**	**Percentage**
No answer	1	0.96%
Yes (yes)	51	49.04%
No (no)	18	17.31%
Unknown (u)	34	32.69%



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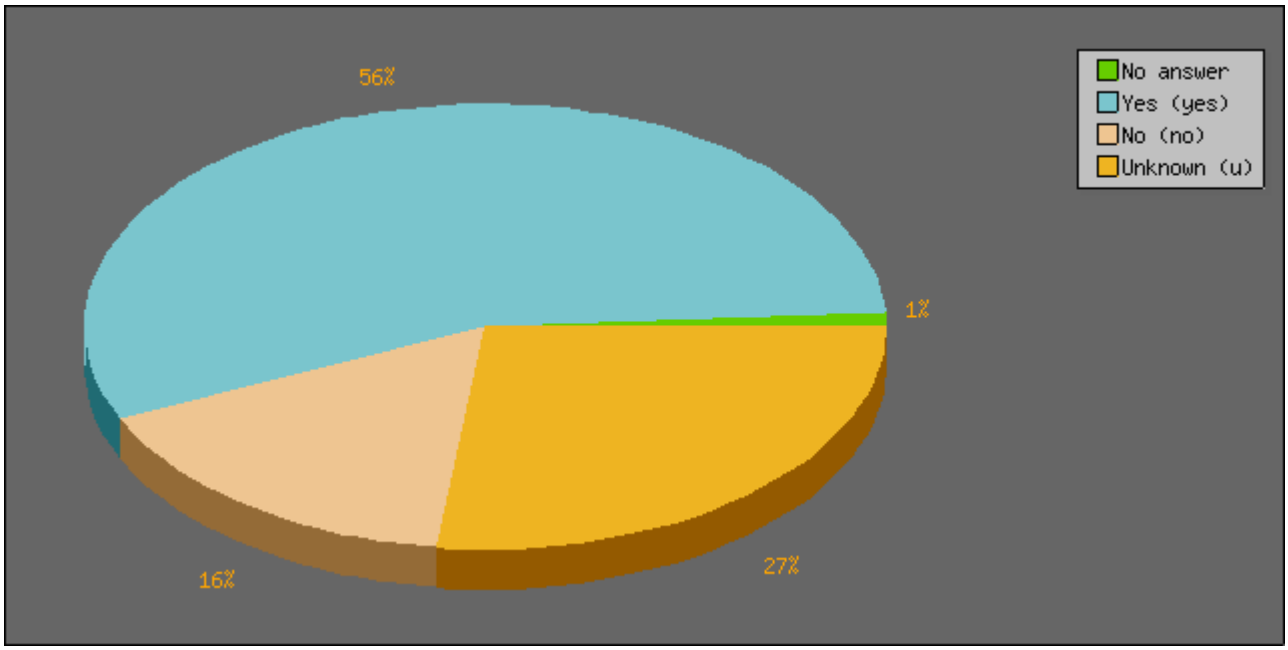
Field Summary for 4.20.4:		
Was public information regarding mass care (sheltering, feeding, & related services) made available throughout the incident through multiple channels and venues?		
Answer	**Count**	**Percentage**
No answer	1	0.96%
Yes (yes)	58	55.77%
No (no)	17	16.35%
Unknown (u)	28	26.92%



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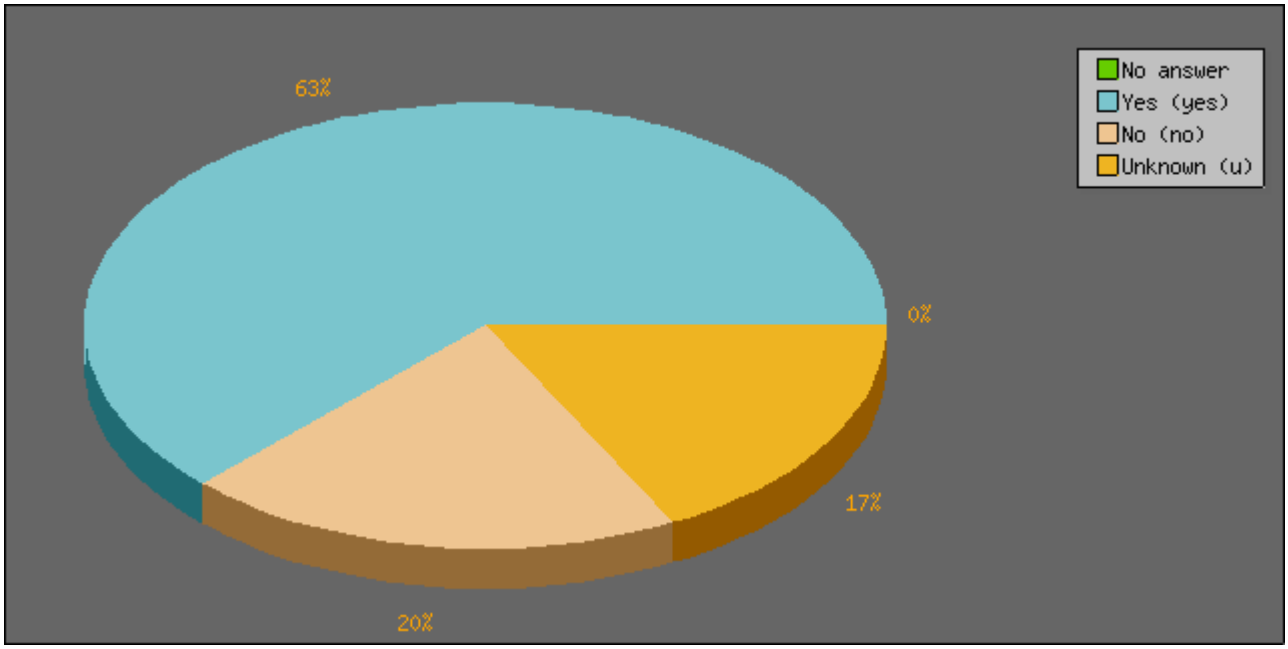
Field Summary for 4.20.5:		
Was the special needs shelter plan successfully implemented?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	65	62.50%
No (no)	21	20.19%
Unknown (u)	18	17.31%



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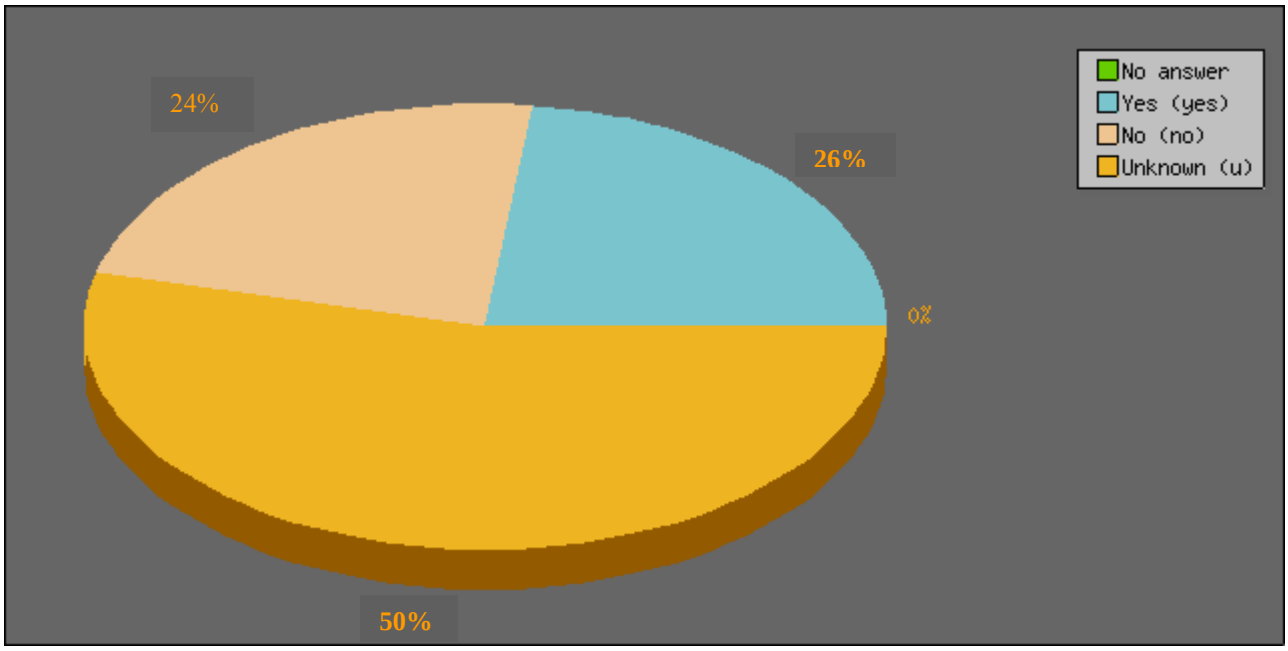
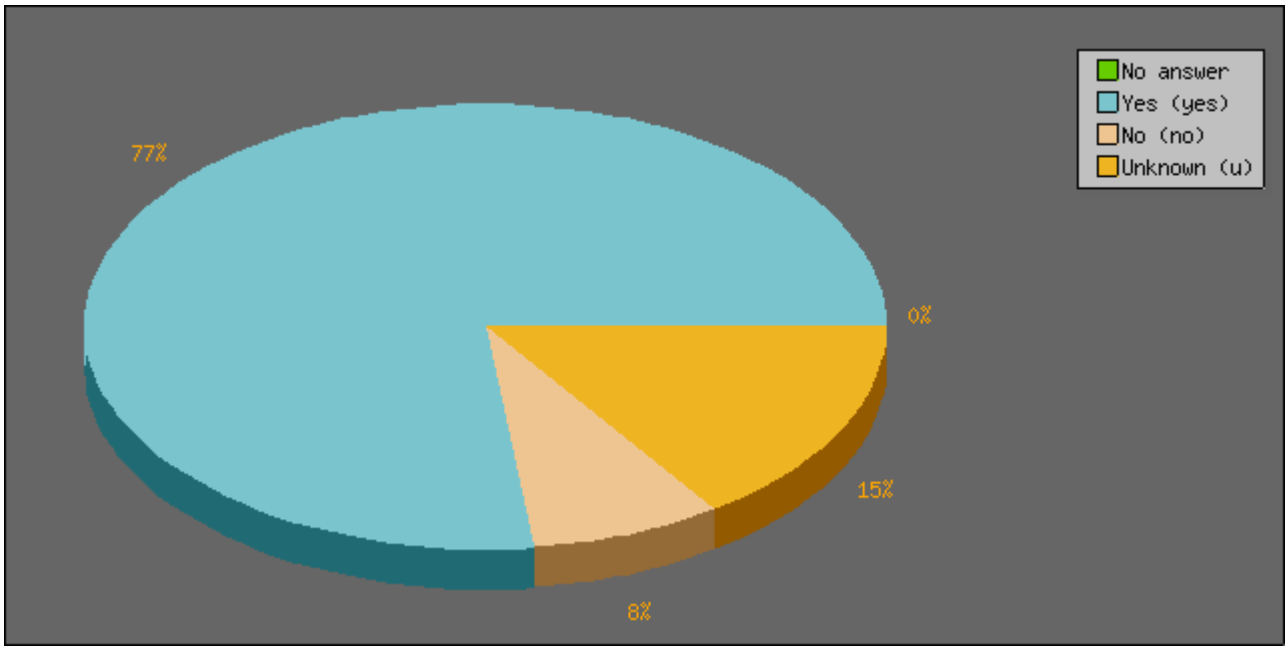
Field Summary for 4.20.7:		
Was a pet care / handling plan implemented for sheltering of pets?		
Answer	Count	Percentage
No answer	0	0.00%
Yes (yes)	27	25.96%
No (no)	25	24.04%
Unknown (u)	52	50.00%



Field Summary for 4.21.0:		
Were you a part of Fatality Management (Manage Fatalities)?		
Answer	Count	Percentage
No answer	0	0.00%
Yes (Y)	13	100.00%
No (N)	0	0.00%

Field Summary for 4.21.1:		
Were victims families contacted?		
Answer	Count	Percentage
No answer	0	0.00%
Yes (yes)	10	76.92%
No (no)	1	7.69%
Unknown (u)	2	15.38%



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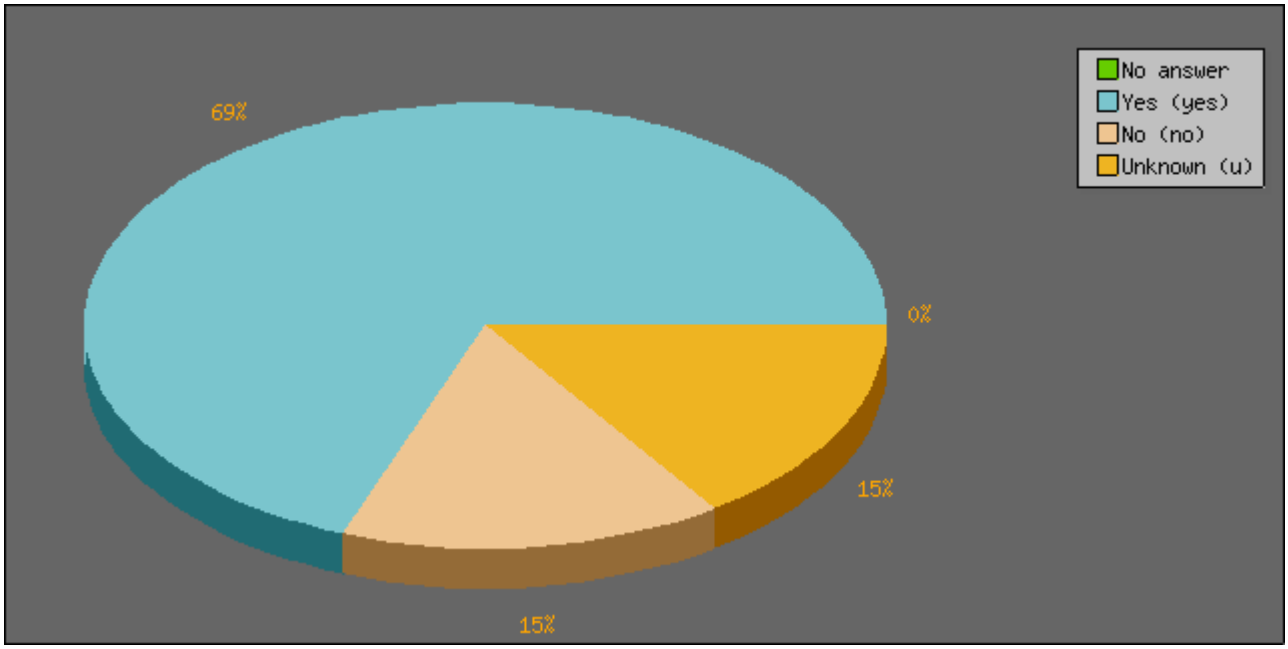
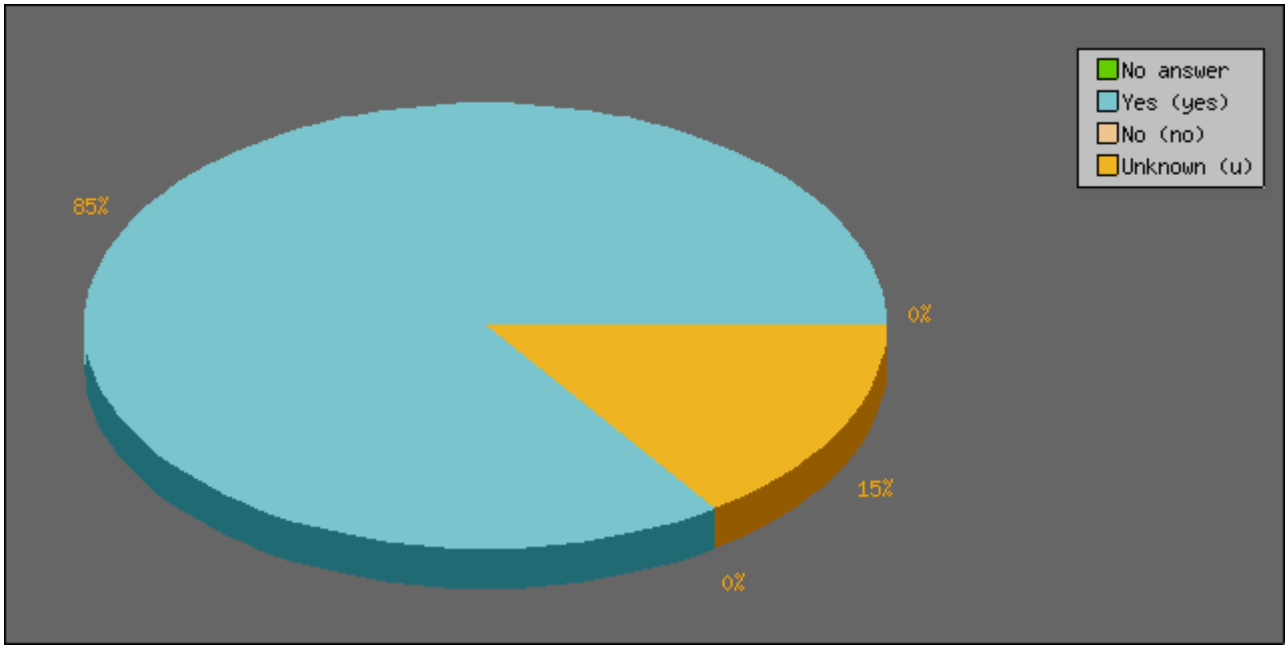
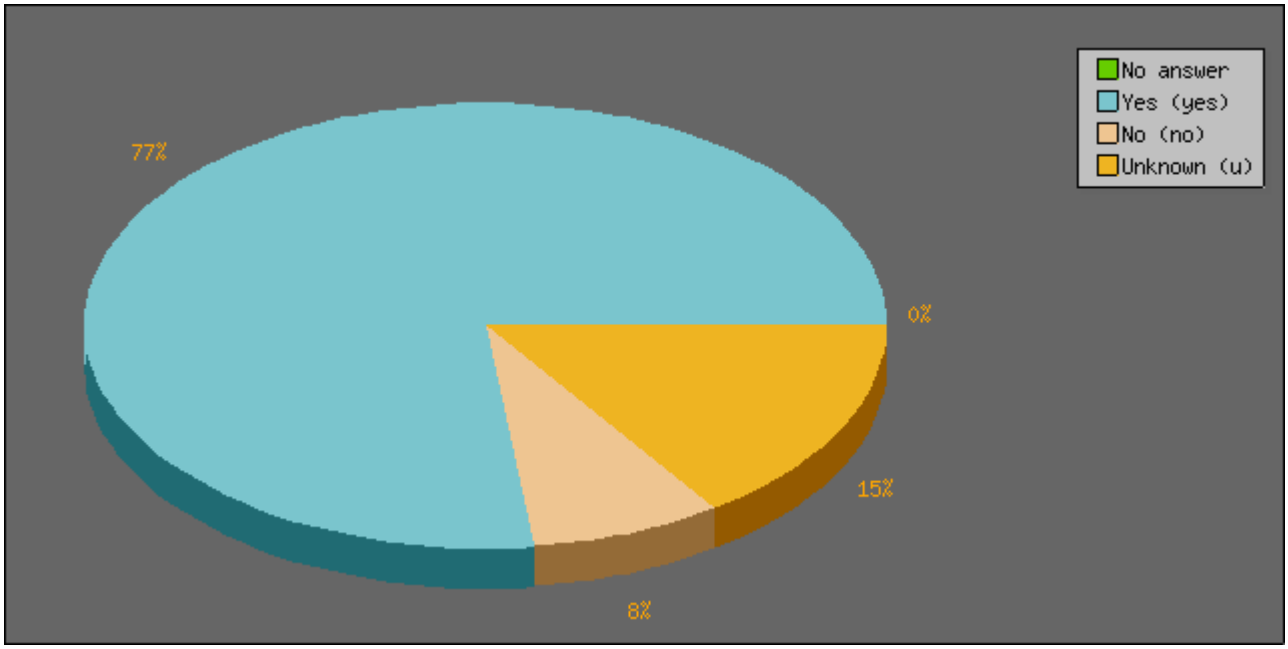
Field Summary for 4.21.2:		
Were victims able to be identified?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	9	69.23%
No (no)	2	15.38%
Unknown (u)	2	15.38%



Field Summary for 4.21.3:		
Were DMORT resources available?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	11	84.62%
No (no)	0	0.00%
Unknown (u)	2	15.38%



Field Summary for 4.21.5:		
Was the DMORT response adequate and proactive?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	10	76.92%
No (no)	1	7.69%
Unknown (u)	2	15.38%



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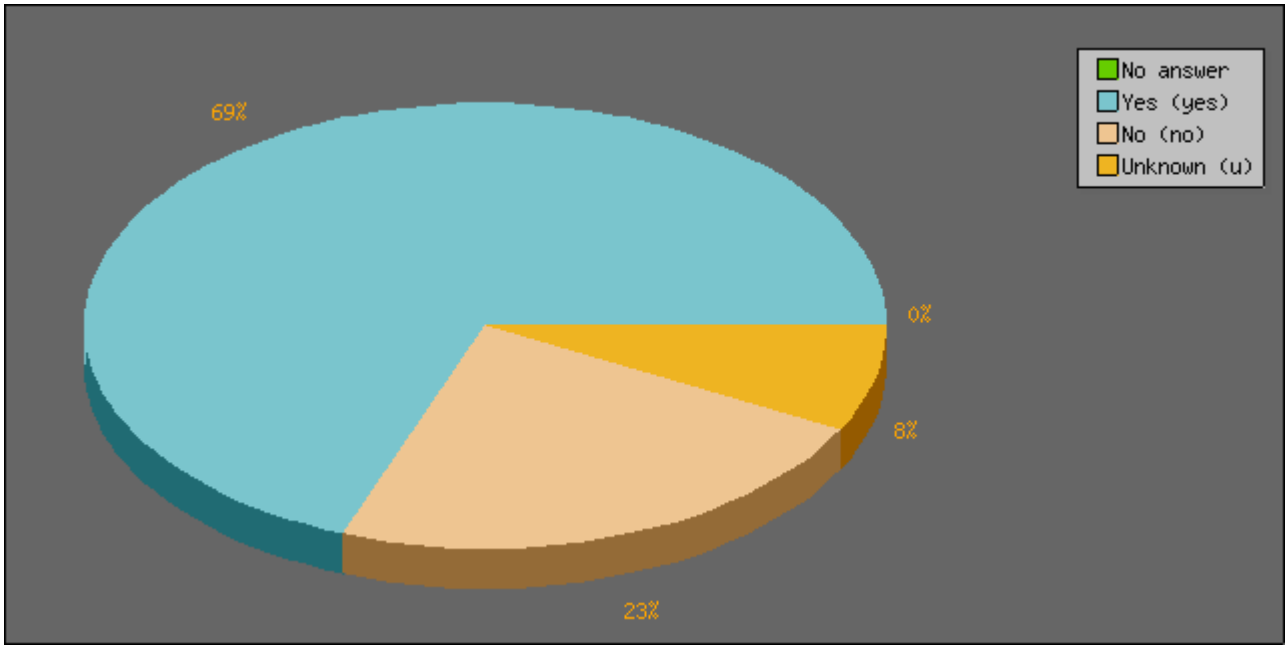
Field Summary for 4.21.6:		
Was coordination between medical examiner/coroner and public safety personnel established?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	9	69.23%
No (no)	3	23.08%
Unknown (u)	1	7.69%



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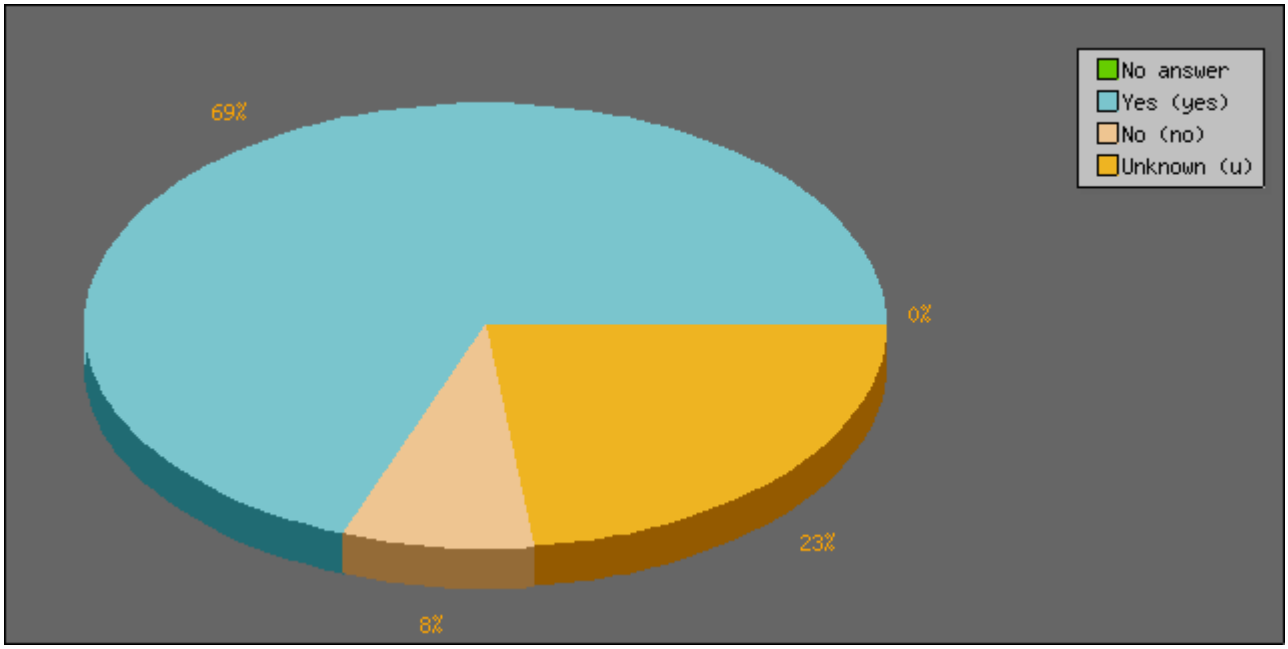
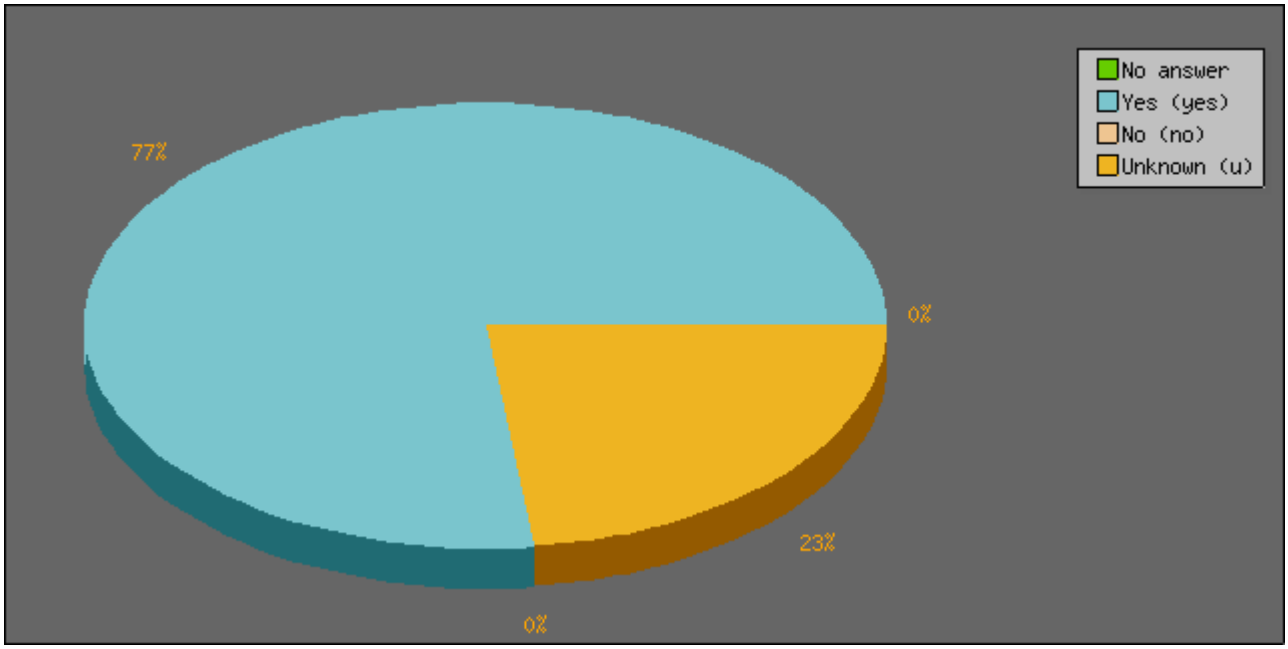
Field Summary for 4.21.7:		
Were personal effects and evidence correctly managed?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	9	69.23%
No (no)	1	7.69%
Unknown (u)	3	23.08%



Field Summary for 4.21.8:		
Were remains handled appropriately?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	10	76.92%
No (no)	0	0.00%
Unknown (u)	3	23.08%



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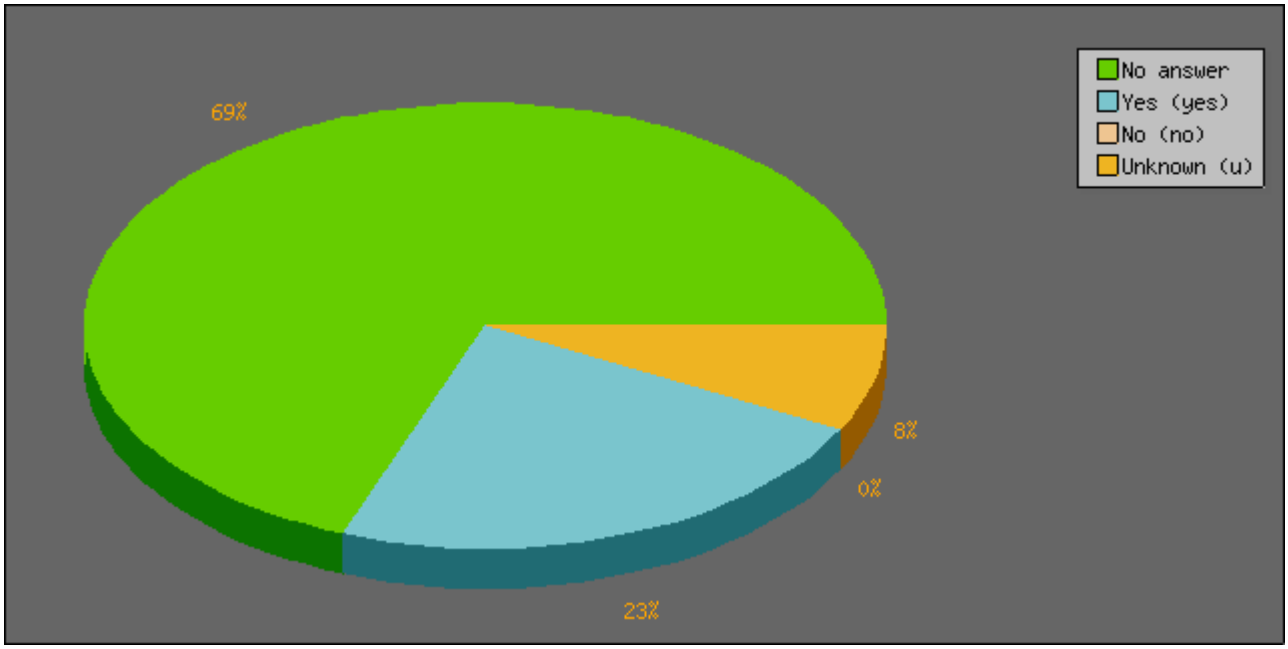
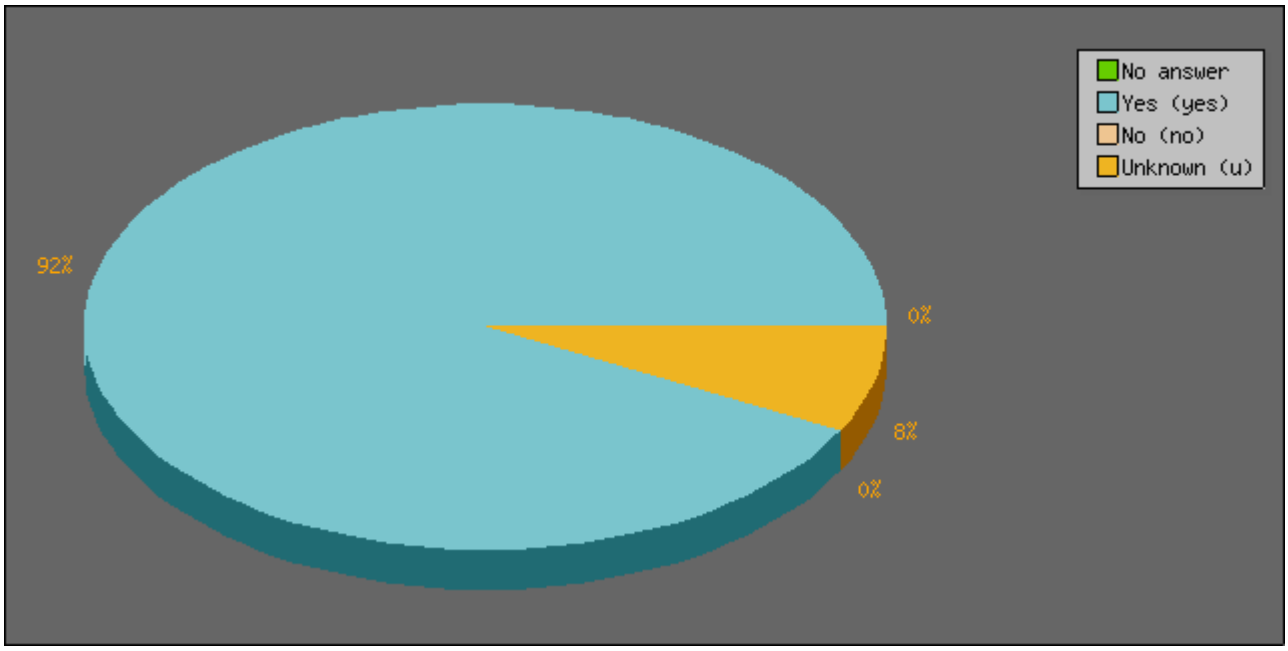
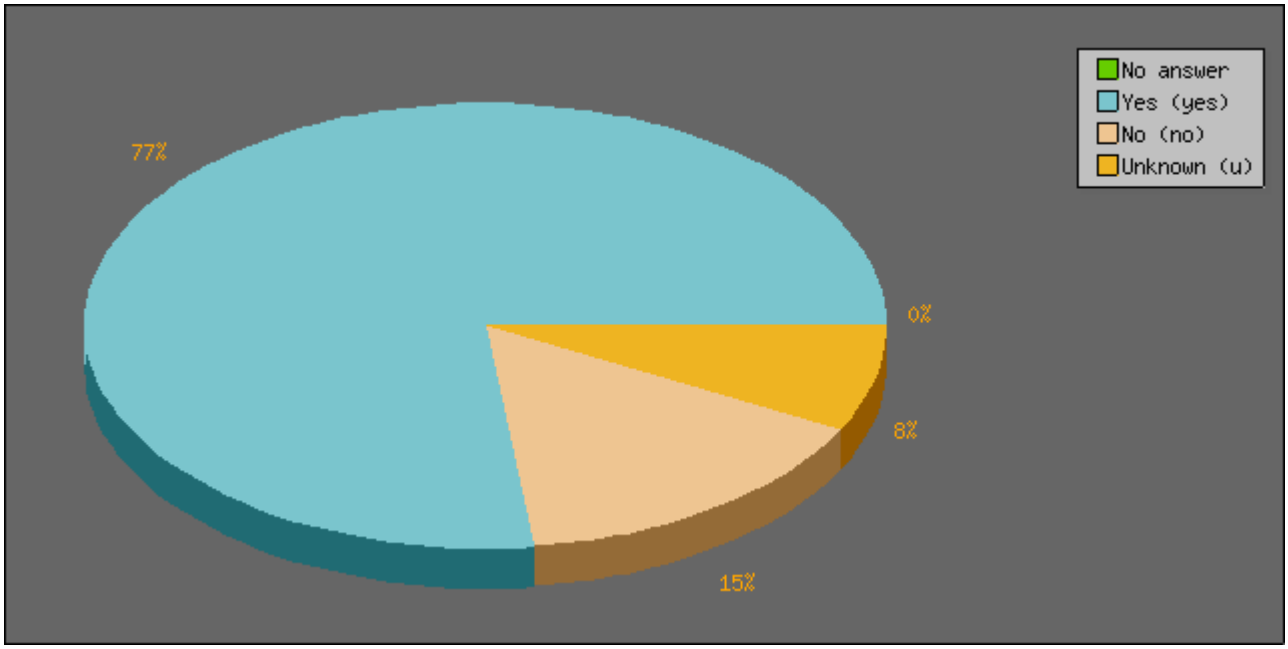
Field Summary for 4.21.9/15:		
Were remains properly and effectively decontaminated?		
Answer	**Count**	**Percentage**
No answer	9	69.23%
Yes (yes)	3	23.08%
No (no)	0	0.00%
Unknown (u)	1	7.69%



Field Summary for 4.21.12:		
Were locations for a temporary morgue near incident site(s) identified?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	12	92.31%
No (no)	0	0.00%
Unknown (u)	1	7.69%



Field Summary for 4.21.13:		
Was sufficient PPE available to protect workers involved in decontamination, identification, post mortem examination, disposition, etc. of contaminated bodies?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	10	76.92%
No (no)	2	15.38%
Unknown (u)	1	7.69%



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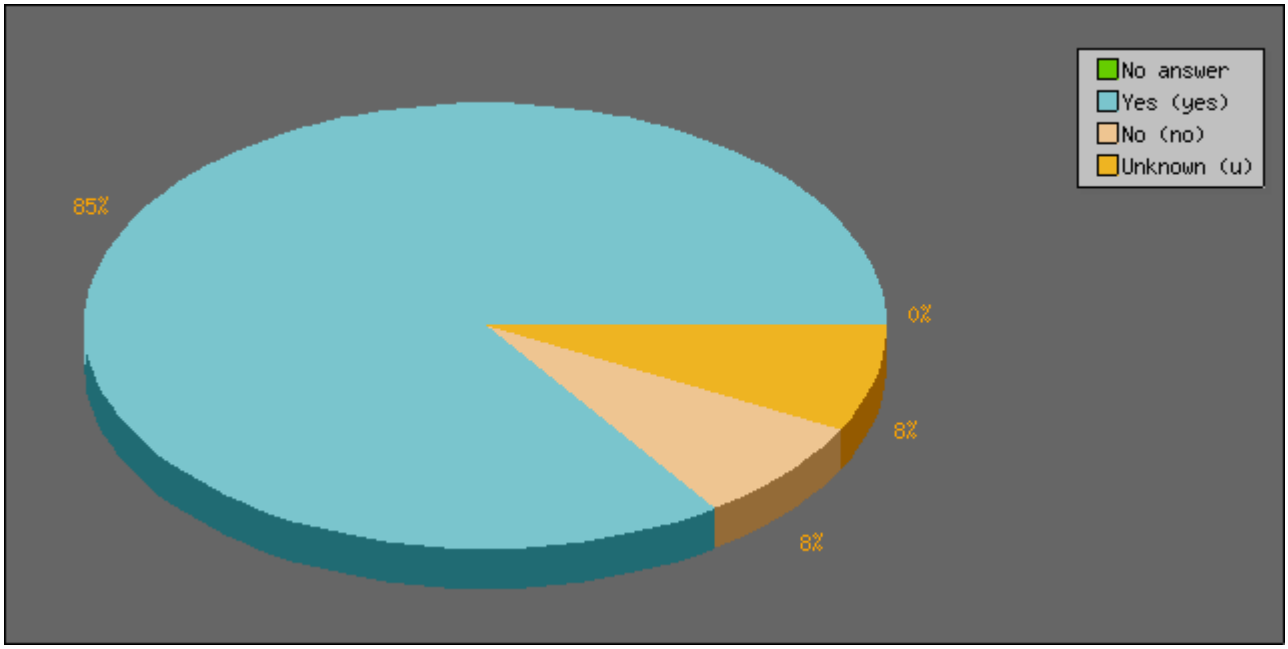
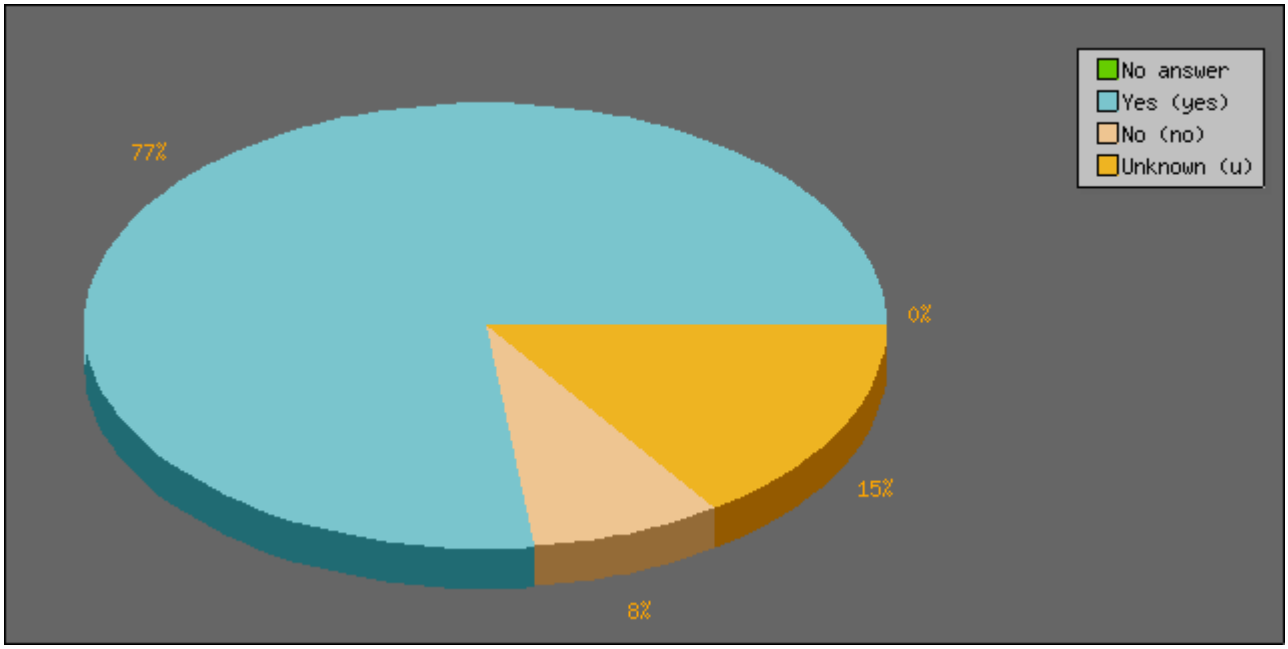
Field Summary for 4.21.14:		
Was a plan for temporary storage of remains activated?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	11	84.62%
No (no)	1	7.69%
Unknown (u)	1	7.69%



Field Summary for 4.21.16:		
Was coordination between medical examiners and emergency operations center (EOC) established?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	10	76.92%
No (no)	1	7.69%
Unknown (u)	2	15.38%



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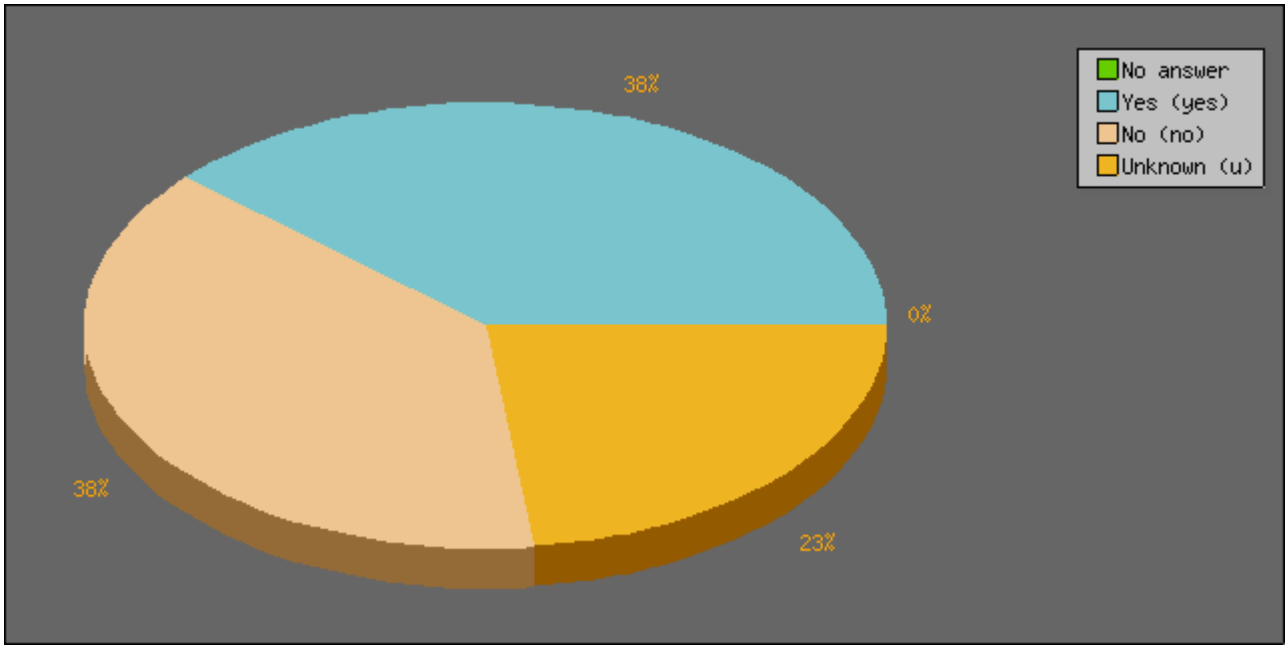
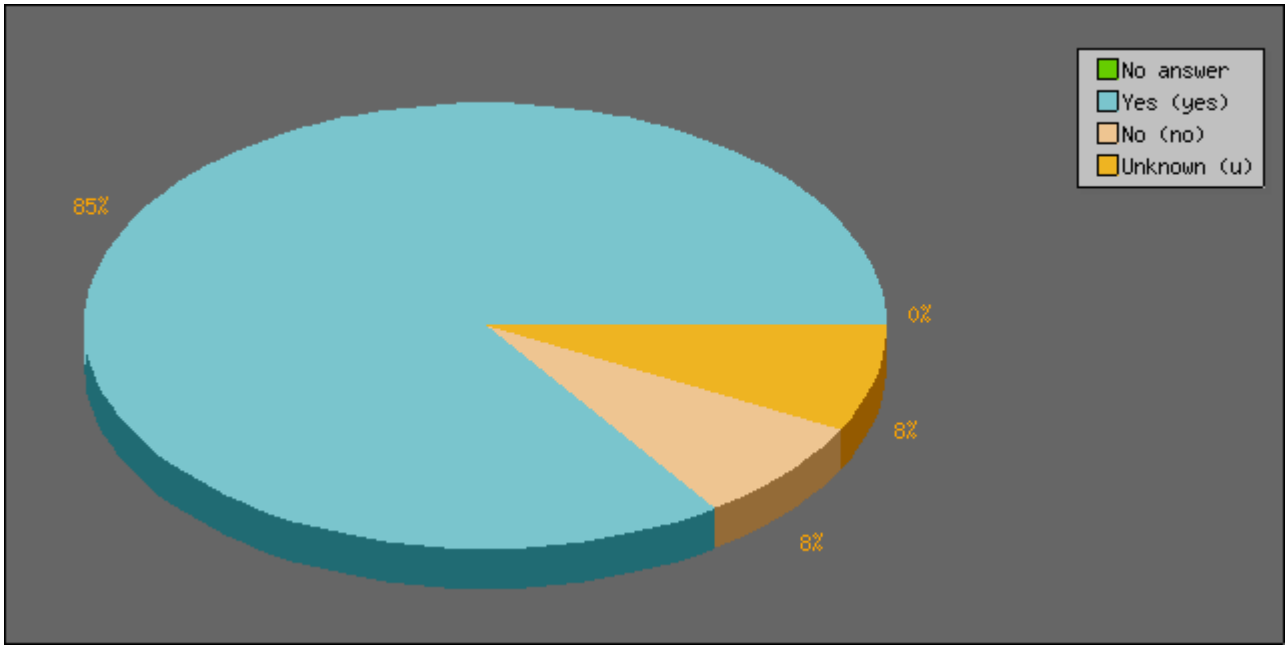
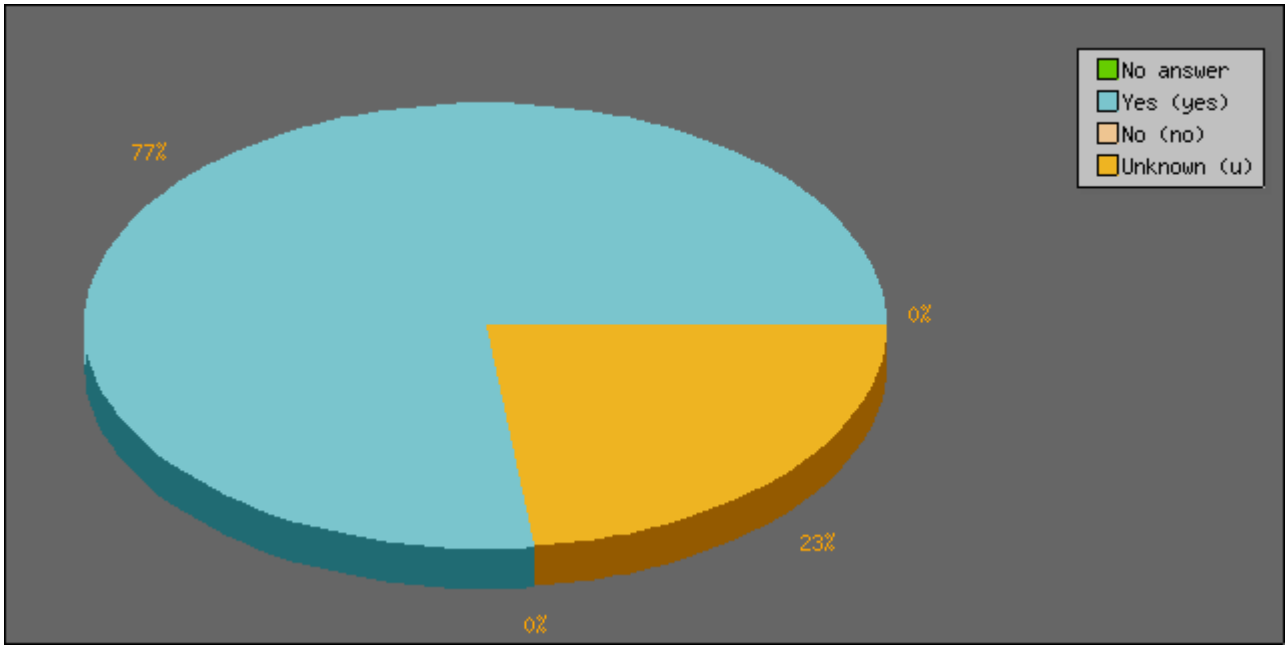
Field Summary for 4.21.18:		
Was the State Medical Examiners (ME) office included in the emergency operation center?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	5	38.46%
No (no)	5	38.46%
Unknown (u)	3	23.08%



Field Summary for 4.21.19:		
Was a victim search and recovery plan established and utilized?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	11	84.62%
No (no)	1	7.69%
Unknown (u)	1	7.69%



Field Summary for 4.21.20:		
Was a victim labeling system established and utilized during search and recovery efforts?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	10	76.92%
No (no)	0	0.00%
Unknown (u)	3	23.08%



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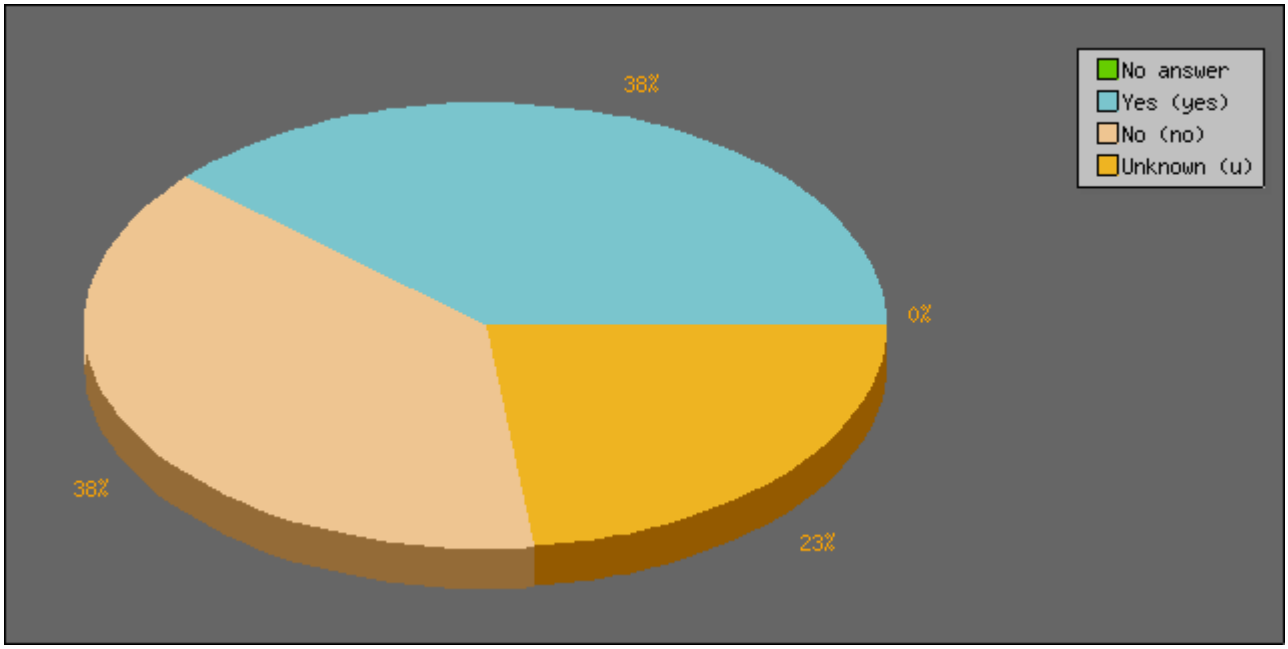
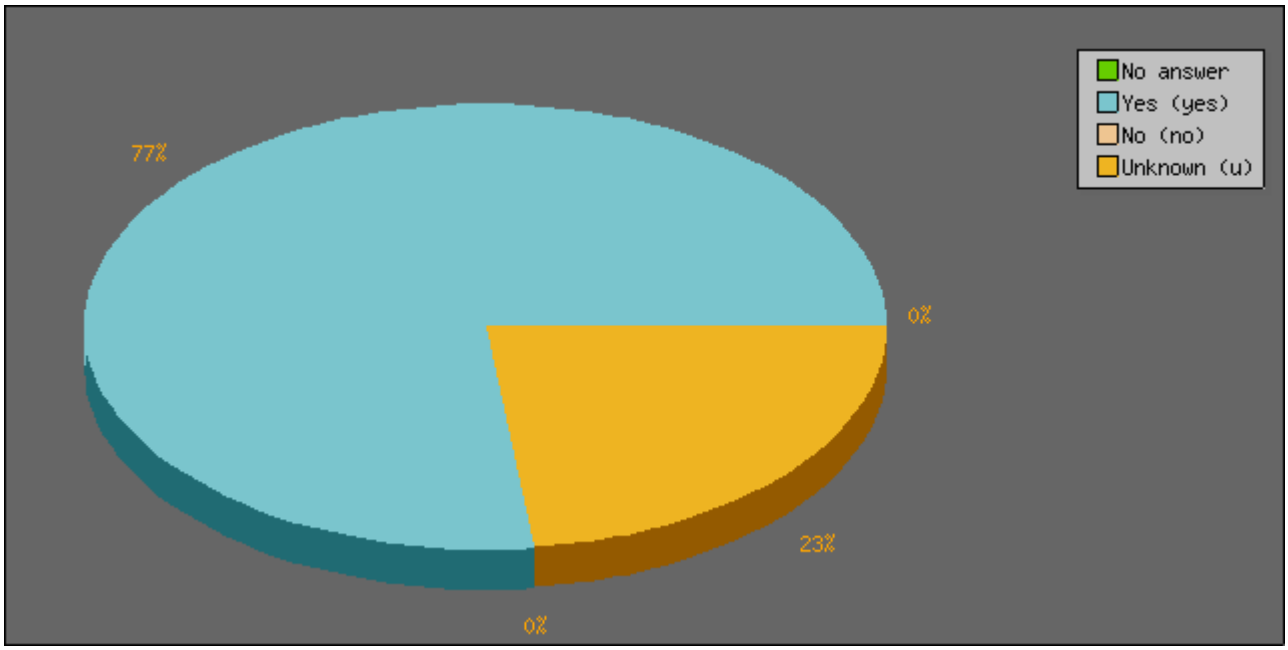
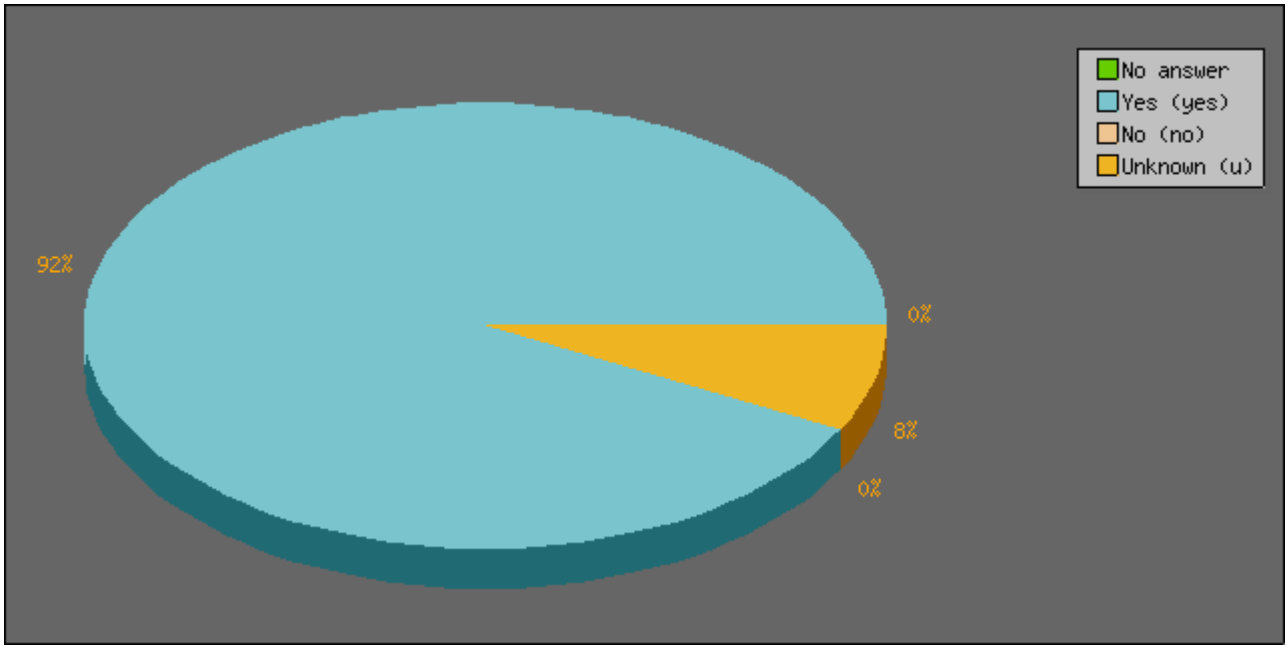
Field Summary for 4.21.21:		
Were adequate personnel available for search and recovery efforts?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	5	38.46%
No (no)	5	38.46%
Unknown (u)	3	23.08%



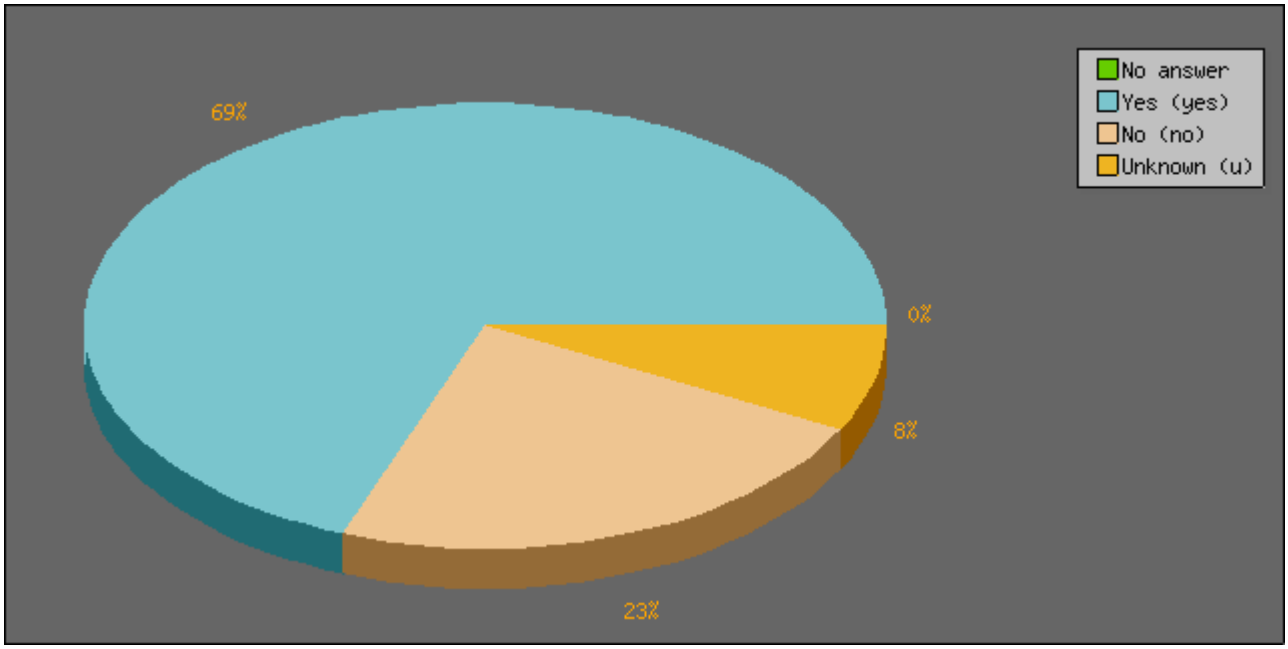
Field Summary for 4.21.22:		
Were victim collection points established for temporary storage of victims awaiting transport to the morgue facility?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	10	76.92%
No (no)	0	0.00%
Unknown (u)	3	23.08%



Field Summary for 4.21.23:		
Was a system established for transportation of recovered victims to the morgue facility?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	12	92.31%
No (no)	0	0.00%
Unknown (u)	1	7.69%



Field Summary for 4.21.24:		
Were a sufficient number of refrigerated trucks available for storage and transportation of victims to the morgue facility?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	9	69.23%
No (no)	3	23.08%
Unknown (u)	1	7.69%



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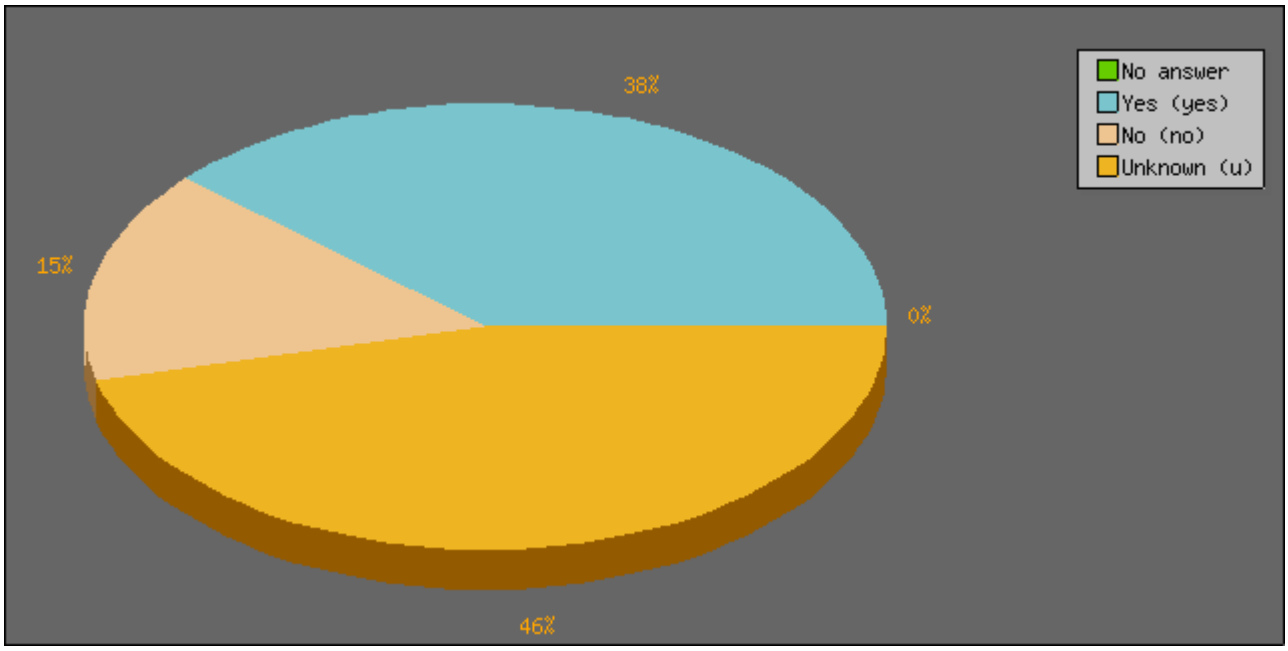
Field Summary for 4.21.25:		
Was a system established with the medical facilities/triage areas to ensure all hurricane-related deaths (including delayed deaths) were reported to the ME Office?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	5	38.46%
No (no)	2	15.38%
Unknown (u)	6	46.15%



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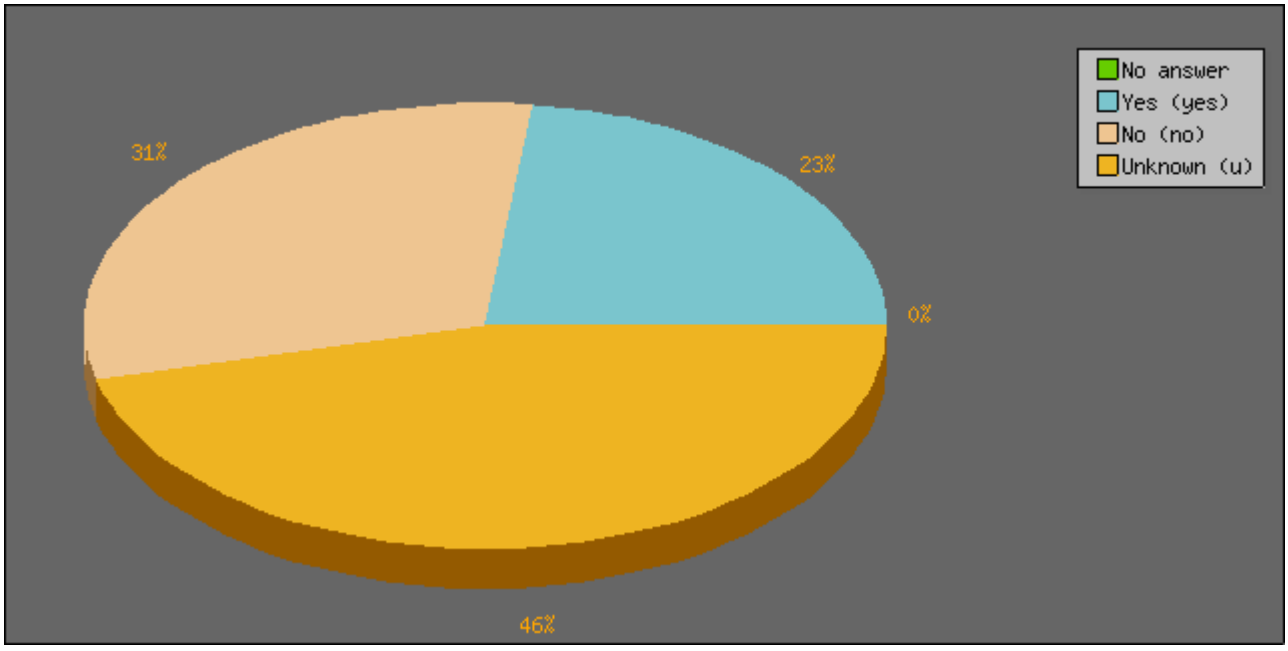
Field Summary for 4.21.26:		
Was an ME protocol established regarding handling of medical facility hurricane-related deaths?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	3	23.08%
No (no)	4	30.77%
Unknown (u)	6	46.15%



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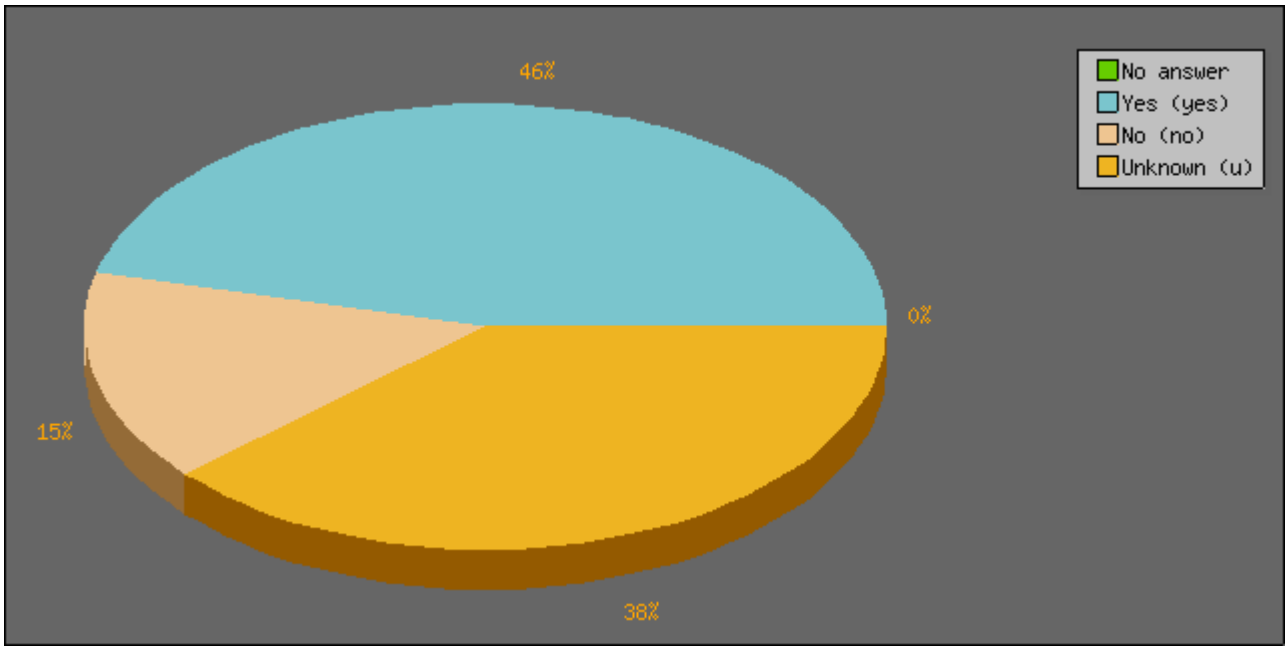
Field Summary for 4.21.27:		
Were collection points established at medical facilities/triage areas for storage of all hurricane-related victims prior to their transport to the ME facility if needed per protocol?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	6	46.15%
No (no)	2	15.38%
Unknown (u)	5	38.46%



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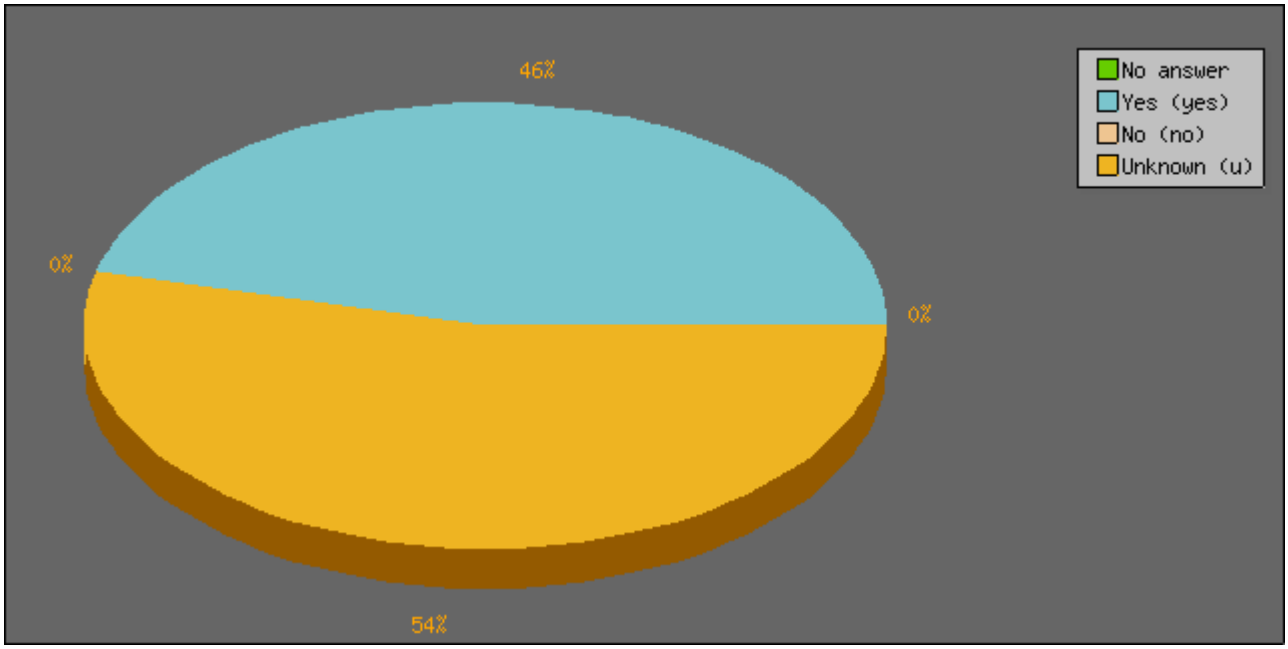
Field Summary for 4.21.28:		
Was a Family Assistance Center (FAC) established ?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	6	46.15%
No (no)	0	0.00%
Unknown (u)	7	53.85%



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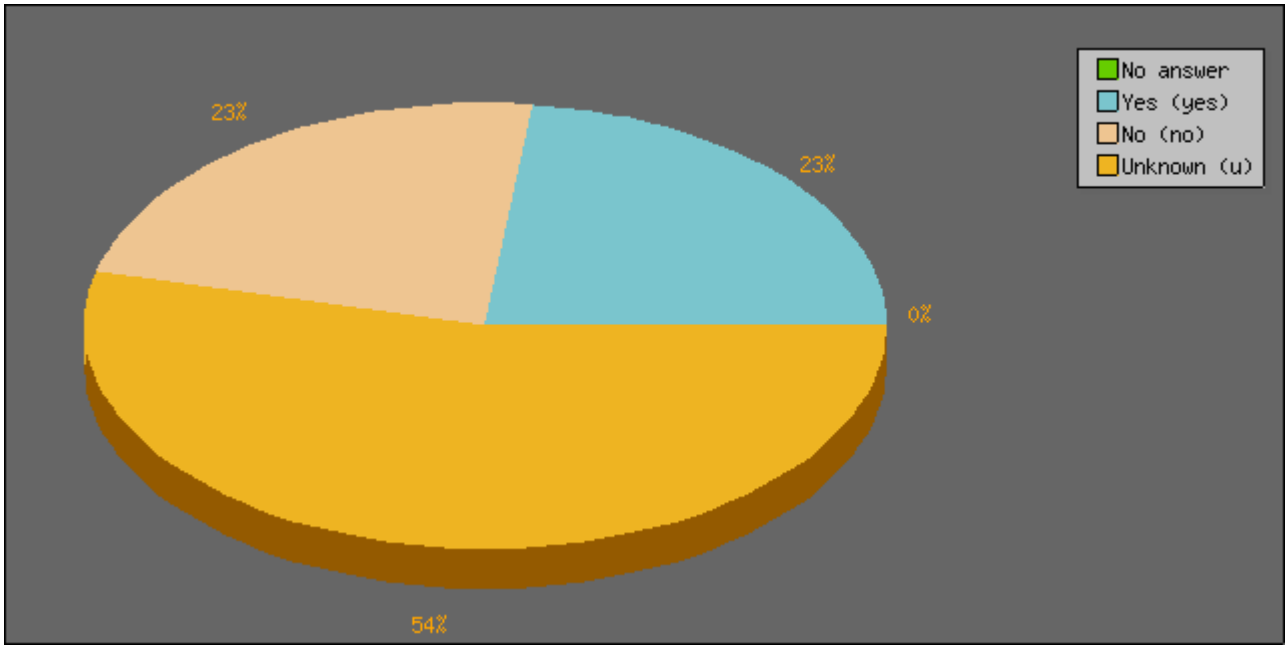
Field Summary for 4.21.29:		
Was a representative of the Medial Examiners office assigned to the FAC?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	3	23.08%
No (no)	3	23.08%
Unknown (u)	7	53.85%



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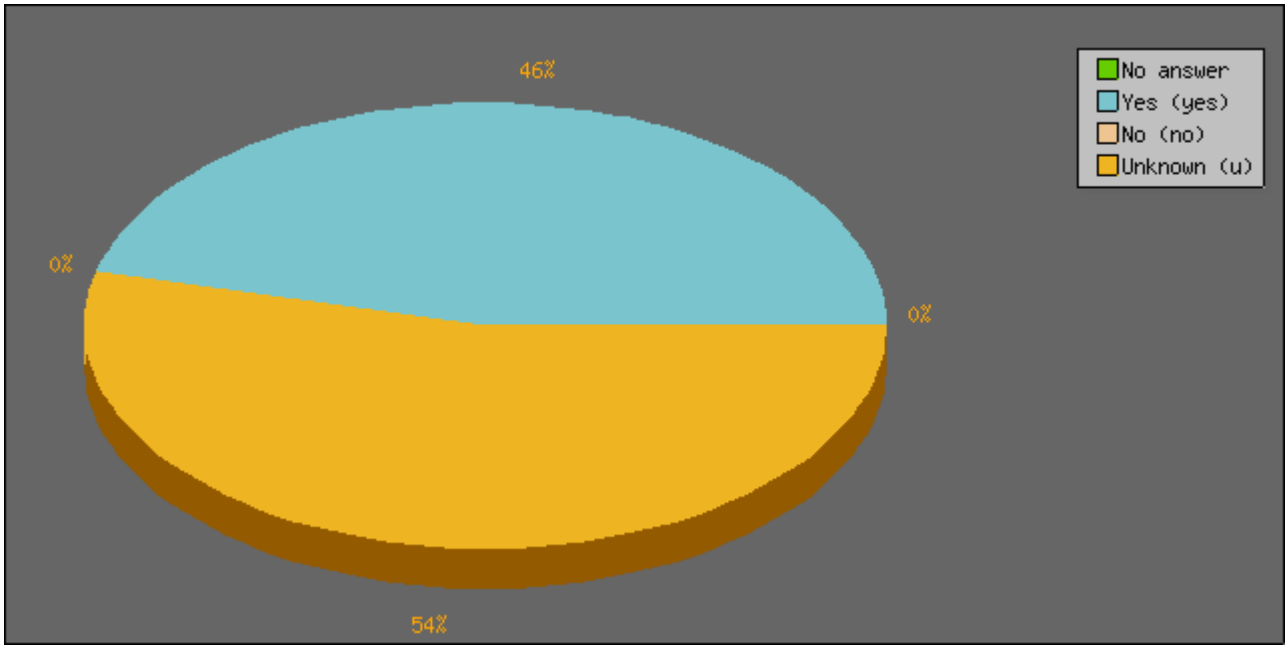
Field Summary for 4.21.30:		
Was a Family Victim Identification Center established for collection of ante-mortem identification information?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	6	46.15%
No (no)	0	0.00%
Unknown (u)	7	53.85%



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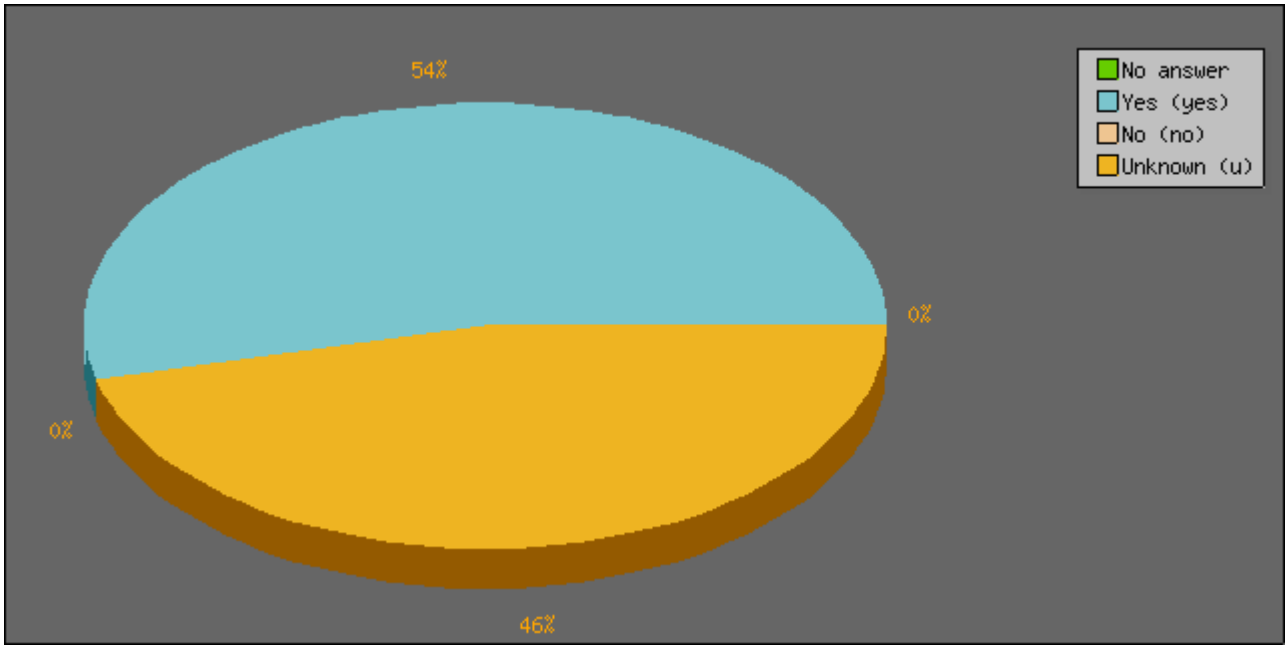
Field Summary for 4.21.31:		
Was an autopsy protocol established for the victims?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	7	53.85%
No (no)	0	0.00%
Unknown (u)	6	46.15%



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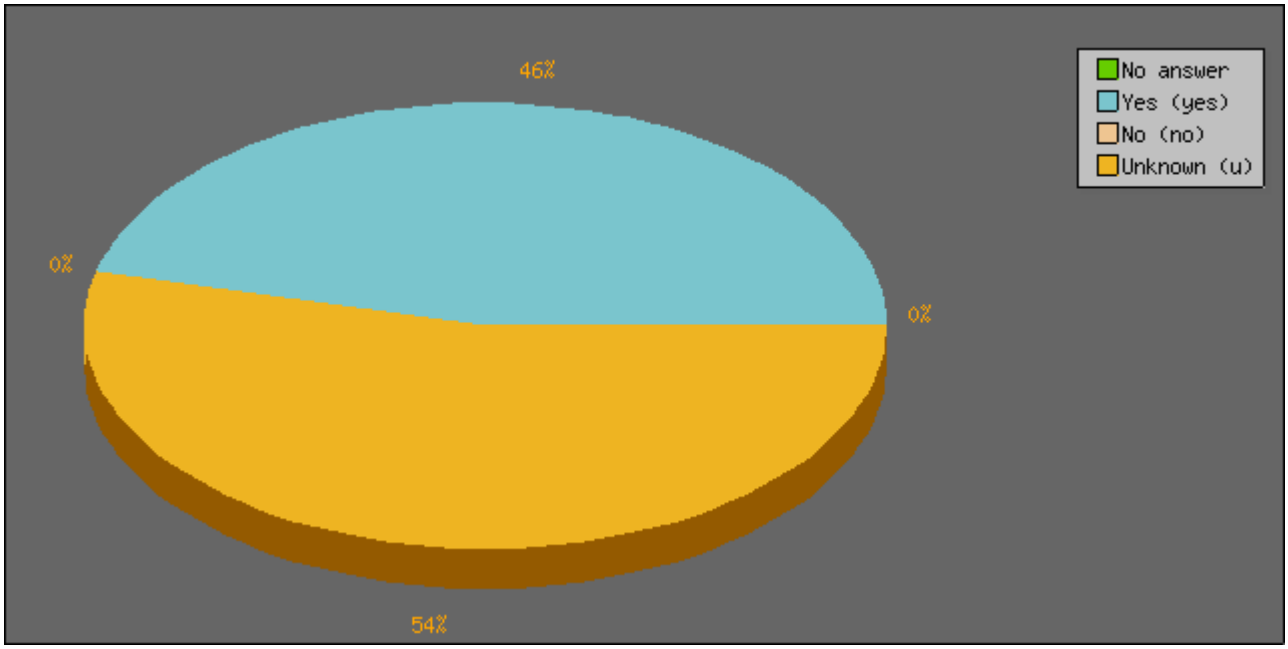
Field Summary for 4.21.32:		
Did the autopsy protocol include handling of body part and tissue fragments?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	6	46.15%
No (no)	0	0.00%
Unknown (u)	7	53.85%



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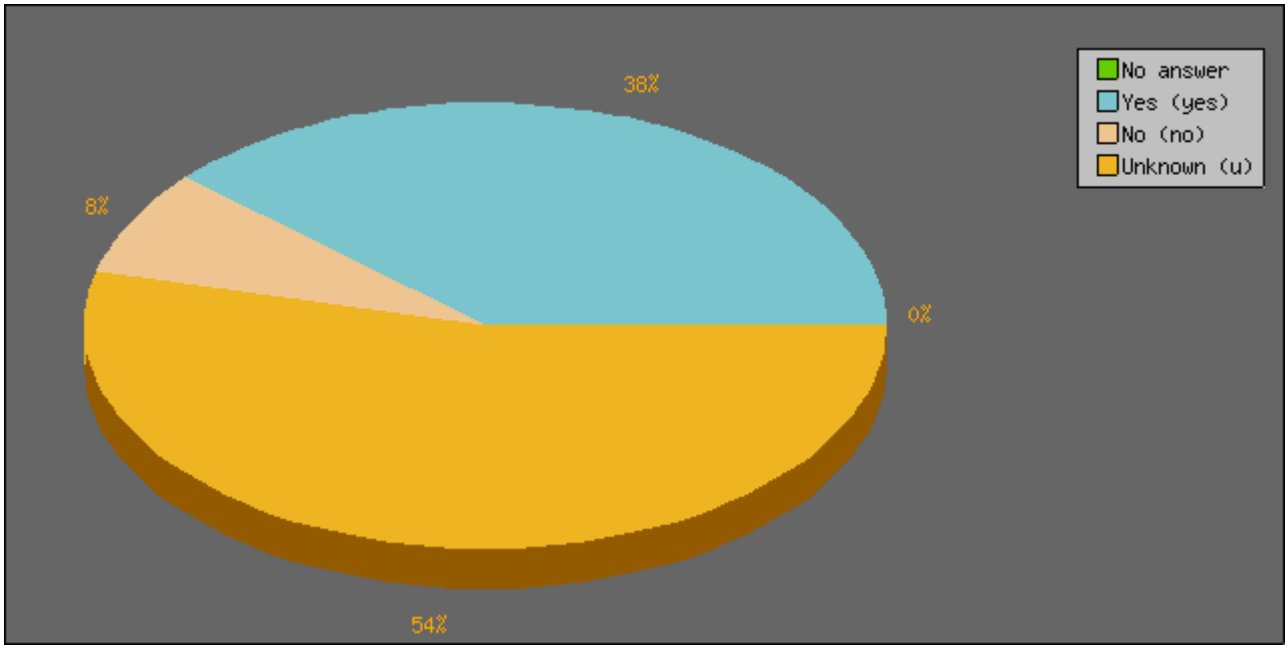
Field Summary for 4.21.33:		
Was a death certificate protocol established addressing uniformity and standardization of terminology of all victims?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	5	38.46%
No (no)	1	7.69%
Unknown (u)	7	53.85%



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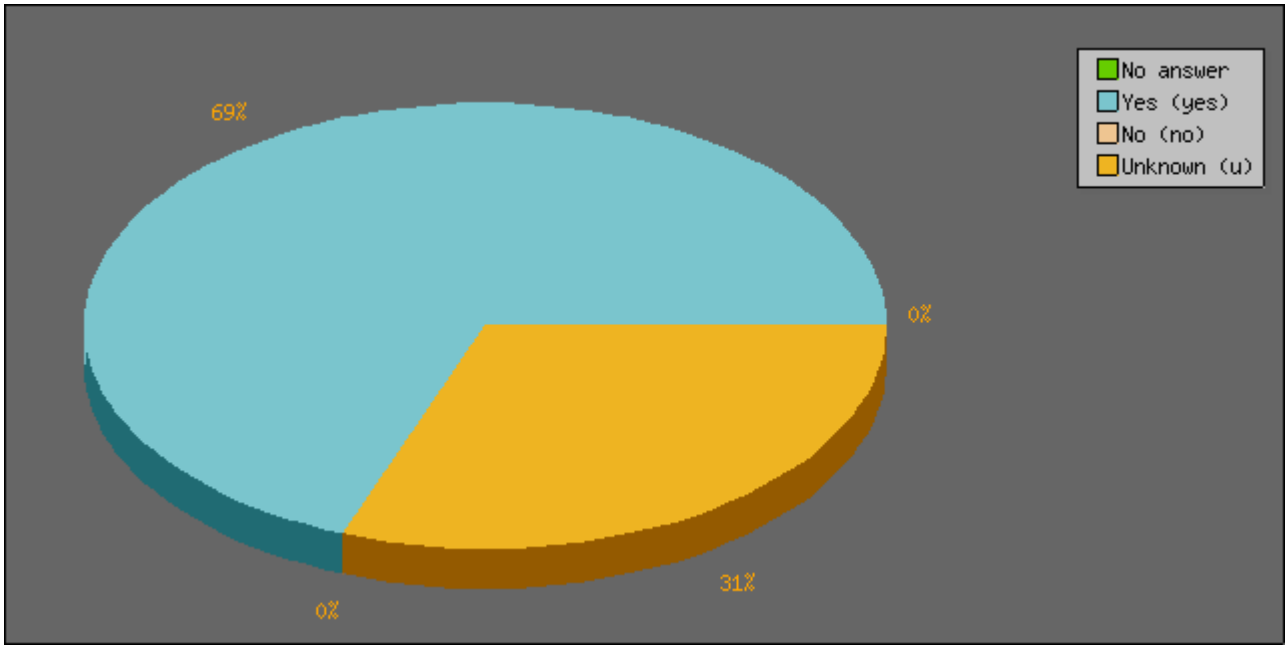
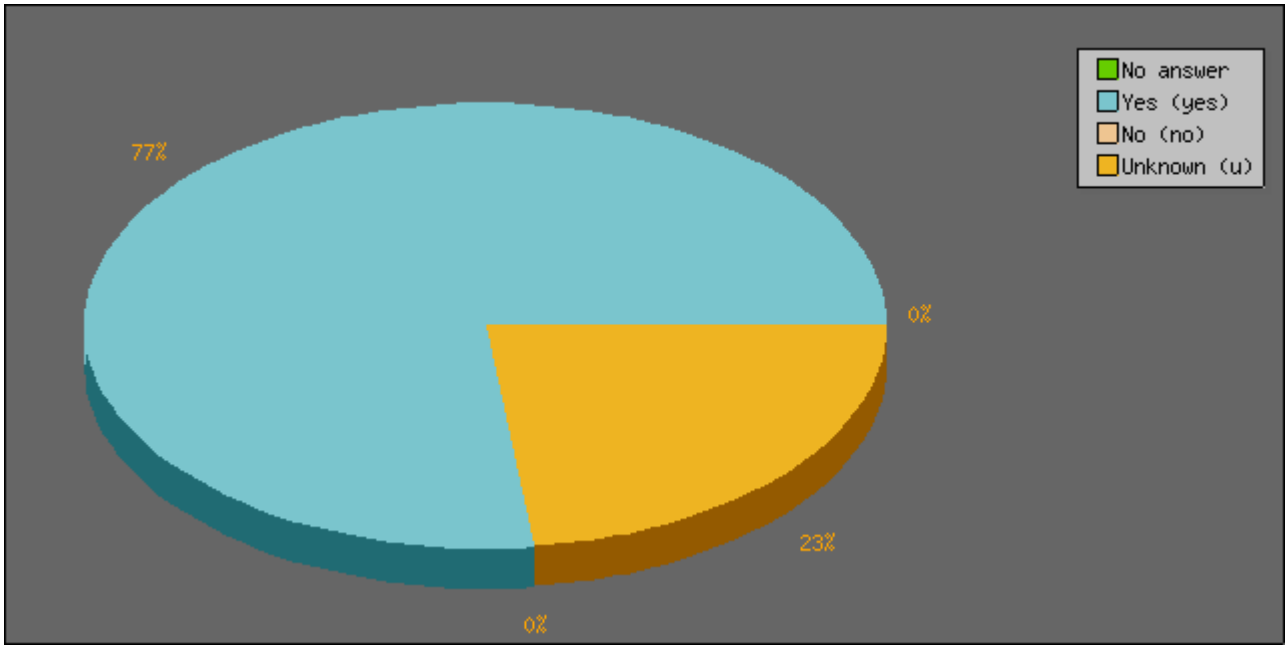
Field Summary for 4.21.34:		
Was a fatality data collection system established to ensure proper documentation of victims ID information, personal effects, examination, toxicology, cause and manner, etc of death and disposition prior to release of the victim?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	9	69.23%
No (no)	0	0.00%
Unknown (u)	4	30.77%



Field Summary for 4.21.35:		
Was a record of disaster related obligations, work hours and expenditures maintained?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	10	76.92%
No (no)	0	0.00%
Unknown (u)	3	23.08%



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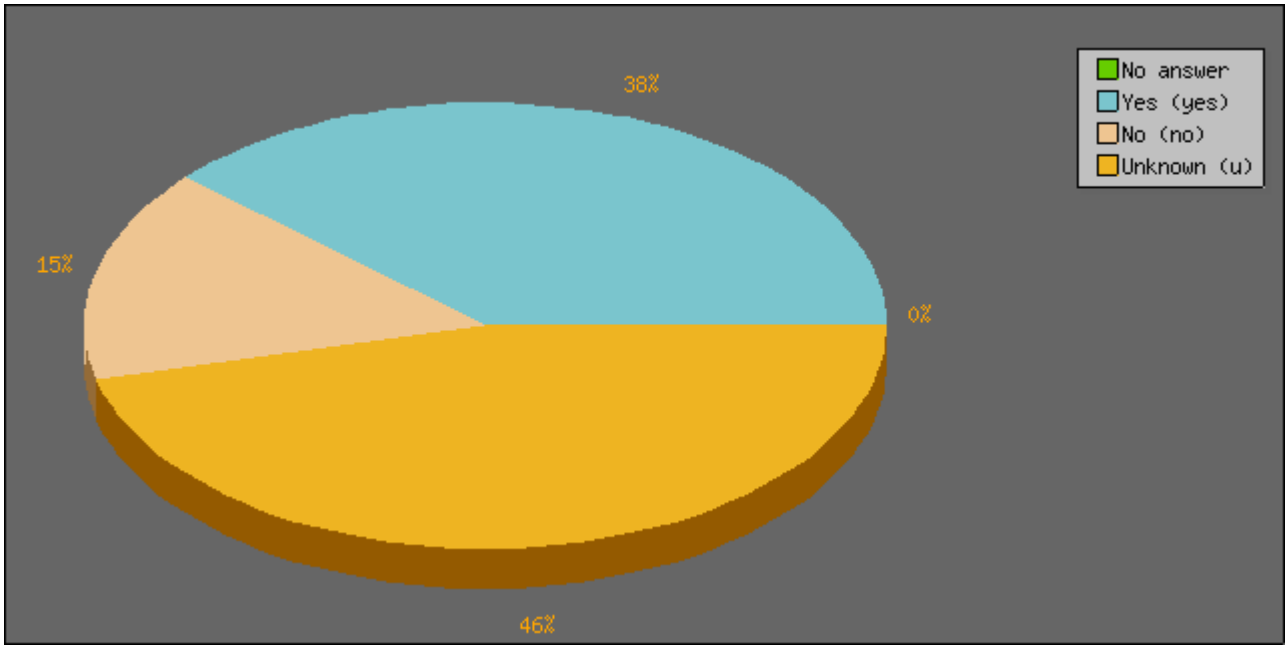
Field Summary for 4.21.36:		
Was a system established for the handling of non-hurricane related Medical Examiner deaths?		
Answer	**Count**	**Percentage**
No answer	0	0.00%
Yes (yes)	5	38.46%
No (no)	2	15.38%
Unknown (u)	6	46.15%



APPENDIX D
Mississippi Department of Health
Katrina After Action Report
Responder Survey Instrument

DEMOGRAPHICS

1) Which of the following job categories best describes the role you perform in your daily job?

Public Health
- Nursing
- Clerical/Administration
- Health Director
- Environmental Health/Occupational Safety
- Social Work/Mental Health
- Allied Health Professional
- Health Education
- Nutrition
- Management/Policy Analysis
- Epidemiology
- Medical Director/Physician
- Laboratory
- Non-health Professional

Medical
- EMT/Paramedic
- Physician
- Nurse
- Laboratory
- Pharmacy
- Psychiatrist/Psychologist
- Respiratory Therapist
- Other Medical

2) What is your job or position title? (open ended)

3) How long have you worked in this position?
- Less than 1 year
- 1-2 years
- 3-5 years
- 6 or more years

4) What type of organization did you work in daily prior to the hurricane?
- District Health Department
- State Health Department
- Hospital
- Clinic
- EMS
- Private Agency/Private Practice
- Other - option box

5) During Hurricane Katrina response, what was your assigned position level?
- Upper Management / Command Staff
- Middle Management / Branch Chiefs / Strike Team Leader
- Field Employee / Staff section / Strike Team member
- Office Administration / support staff / non-management

6) Where did you work during the Hurricane Katrina response?
- District Health Office
- County Health Department
- Emergency Management State Emergency Operations Center
- Public Health Forward Command Center
- County Emergency Operations Center
- State Public Health Emergency Operations Center
- Local Emergency Operations Center
- Hospital Emergency Operations Center
- SNS Wharehouse
- SNS Distribution
- Federalized Medical Facility
- EMAC Medical Facility
- EMS - AMR
- EMS - AAA
- EMS - Acadian
- Special Needs Shelter
- Hospital - Inhouse Medical
- etc.?.?.?

7) What was your job function during response and recovery operations?
- State Emergency Operations Center
- Public Health Command Center Central
- Public Health Forward Command
- District Administration/Command
- Disaster Field Office
- Field Response Unit
- Clinic Operation/Immunization
- Shelter Management
- Support/Clerical/various duties as assigned
- Licensure
- Enviormental Services
- Critical Incident Stress Management/Social Work
- Information Technology/Communications
- Public Information
- Evacuation Management/Medical Transportation/EMS
- etc.?.?.?

8) For your assigned job function, how much experience did you have for this position?

1	2	3	4	5	6
Minimum					Extensive

9) How well prepared were you for the tasks you were assigned during Hurricane Katrina response?

1	2	3	4	5	6
Minimum					Extensive

* Participents of the survey will be asked to check the boxes indicating areas that they had knowledge in during deployment (Boxes indicated in column "B"), and click "next"
* Areas they indicate as areas of knowledge will expand in the next window to answer as YES, NO, or UNKNOWN (Columns "C, D, and E").
* Questions indicating "NO" will command an open text box allowing for open comment as to why the standard was not met.
* Some questions are included in the Key Responder Survey that is on the second tab below. These questions expand on areas of the "Target Capabilty List" that need "deeper" responses.

		YES	NO	Unknown	DHS (ESF-8) Target Capabilities in association with their specific performance measures
1.0.0					**Common Target Capabilities**
1.1.0	☐				***Planning (Preparedness)***
1.1.1					Were "all-hazards" plans successfully implemented during the emergency in accordance with the National Incident Management System (NIMS)?
1.1.2					Was risk analysis and risk management implemented for both deliberate and crisis action planning?
1.1.3					Were mutual aid agreements (MAAs) executed as planned?
1.1.4					Were personnel familure with available MAA and MOUs?
1.2.0	☐				***Interoperable Communications (Communications and Information Management)***
1.2.2					Were sufficient back-up equipment and power sources available?
1.2.3					Were responders able to communicate with counterparts in other jurisdictions
1.2.4					Were responders able to communicate across regional, State and Federal agencies?
1.2.5					Were redundant communications equipment available and activated?
1.2.9					Were common language and coordinated communication protocols implemented?
2.0.0					**Prevent Mission Area-Target Capabilities**
2.1.0	☐				***Information Sharing and Collaboration (Disseminate Threat Information)***
2.1.1					Was hurricane threat information disseminated to your health agency/facility/work place?
3.0.0					**Protect Mission Area-Target Capabilities**
3.3.0	☐				***Food and Agriculture Safety and Defense (Safeguard Public Health)***
3.3.7/8					Were humans with exposure to or ingestion of contaminated food products readily identified?
3.3.12					Were risk communication efforts effective in providing timely & accurate information to the public regarding safety & handling of contaminated food products?
3.4.0	☐				***Public Health Epidemiological Investigation and Laboratory Testing (Safeguard Public Health)***
3.4.2					Were reportable diseases or syndromes of concern successfully recognized, diagnosed and properly reported?
3.4.3					Were suspicious symptoms reported to medical personnel?
3.4.4/5					Were outbreak cases, if any, adequately documented and reported in a timely fashion?
3.4.6					When needed, were alerts generated in a timely fashion?
3.4.8/10/11					Were laboratory specimens collected, handled, and analyzed correctly including maintaining a chain of evidence when necessary?
3.5.0	☐				***Citizen Preparedness and Participation (Prepare the Public)***
3.5.1/3					Was public information on personal preparedness and emergency plans distributed using multiple channels and venues?
3.5.7					Was information on personal preparedness and emergency plans distributed using multiple channels and venues (IE To address special needs or non-english speaking populations)?
3.5.11					Was public information tailored to address special needs populations and cultural differences?
4.0.0					**Respond Mission Area-Target Capabilities**
4.1.0	☐				***On-Site Incident Management (Manage Incident)***
4.1.4					Was an Incident Action Plan (IAP) established?
4.1.4					Were you aware of the IAP?
4.1.5					Were all response activities coordinated through the incident commander?
4.1.6					Were there Standard Operating Procedures (SOP) for establishing an Area Command?
4.1.7					Was the need for Area Command identified?
4.2.0	☐				***Emergency Operations Center Management (Manage Incident)***
4.2.1					Did your jurisdiction recognized need to activate your EOC?
4.2.2					Was there time to staff the EOC?
4.2.3					Did you jurisdiction recognize the need to implement mutual aid?
4.2.4					Did your jurisdiction produce an Incident Action Plan?
4.2.5					Did you jurisdiction set a schedule for Incident Action Planning activities?
4.2.6					Did your agency produce an Incident Action Plan in an adequate amount of time?
4.2.7					Did your jurisdiction produce a Situation Report?
4.2.8					Did your jurisdiction set a schedule for Situation Reporting activities?
4.2.9					Were Situation Reports produced in adequate intervals?
4.2.10					Did your jurisdiction recognize the need to request State and Federal resources?
4.2.12					Did personnel within the EOC have the adequate amount of training for an incident of this size?
4.2.14					Did the EOC have the ability to expand operations?
4.3.0	☐				***Critical Resource Logistics and Distribution (Manage Incident)***
4.3.2					Where resource and logistics plans followed?
4.3.3					Were resource requests met?
4.3.4					Were resource requests filled accurately?
4.3.6					Was the time between requests for resources and delivery of resources adequate?
4.3.7					Did delivered requests exceed warehouse capacity?
4.3.8					Were refueling and maintenance services successfully provided?
4.3.9					Did the type of stockpiled resources utilized meet response requirements?
4.3.10					Did the type of contracted resources utilized meet response requirements?
4.3.11					Were supplies provided to command staff adequate to sustain an operation of this size?
4.4.0	☐				***Volunteer Management and Donations (Manage Incident)***
4.4.1					Volunteer management and donations plans were successfully implemented?
4.4.3					Was there time to establish and fully staff donations coordination centers?
4.4.4					Was there time to establish and fully staff distribution centers?
4.4.6					Were warehousing locations and facilities established and staffed?
4.4.7					Was a volunteer phone bank and/or volunteer reception center established?
4.4.8					Was volunteer credentialing performed (Specifically Medical Volunteers)?
4.5.0	☐				***Worker Health and Safety (Manage Incident)***
4.5.3					Were personnel wearing the required personal protective equipment (PPE) for site entry and work?
4.5.4					Were workers who had been exposed to hazardous substances quantified and recorded?
4.5.5/9					Were personnel treated for injuries or illness by support services including Mental Health services?
4.5.6					Were personnel adequately decontaminated, if indicated?
4.5.7					Were first responders served by support services?
4.5.10					Did your agency have a method of accountability for personnel both pre and post disaster?
4.5.11					Were employees in the affected area provided a method of reporting to work?

4.7.0					***Animal Health Emergency Support (Respond to Hazard)***
4.7.2					Were sufficient field staff (to include veterinarians, animal health technicians, disease specialists, and veterinary diagnostic labs) available to manage animal health issues?
4.7.5					Were animals appropriately euthanized or disposed of for disease control purposes?
4.7.6					Were humans with primary exposure to animals exhibiting clinical signs of disease documented and tracked?
4.7.8/11					Were primary and secondary human exposures to disease identified in a timely fashion?
4.7.14					Was risk communications made available to address animal health issues through multiple venues?
4.8.0					***Environmental Health and Vector Control (Respond to Hazard)***
4.8.1/3					Were public education efforts successfully conducted to help monitor for and minimize the impact of environmental hazards?
4.8.2/6					Were vector control plans (ground and arial) successfully implemented?
4.8.5					Environmental health testing and monitoring was provided
4.12.0					***Citizen Protection: Evacuation and/or In-Place Protection (Implement Protective Actions)***
4.12.2					Was there adequate time to evacuate the affected general population
4.12.3					Was there adequate time to evacuate special needs populations?
4.12.4					Were traffic and transportation plans implemented?
4.12.5					Was the affected general population successfully evacuated?
4.12.6					Were special needs populations successfully evacuated and needs were met?
4.12.7					Were homeless populations identified?
4.12.9					Was coordination with surrounding jurisdictions implemented to ensure adequate locations and facilities for receiving evacuees?
4.12.10					Was the public notified accurately of shelter-in-place strategy (locations identified, duration of shelter, steps to take, etc.)?
4.12.11					Was there time to notify affected population of shelter-in-place strategy?
4.16.0					***Triage and Pre-Hospital Treatment (Provide Medical Care)***
4.16.1					Were triage and pre-hospital treatment plans successfully implemented?
4.16.2					Were patients successfully tracked?
4.16.3					Was PPE equipment available to first responders and medical response personnel?
4.16.4					Was the ability to track where patients where transported existed?
4.16.5					Were there any patients encountered that required decontamination?
4.16.6					Were patients appropriately triaged?
4.16.7					Did triaged patients require re-triaging?
4.16.9					Was triaging completed in an adequate amount of time?
4.16.10					Was complete patient stabilization completed in an adequate amount of time?
4.16.11					Were mutual aid and interfaculty ambulances utilized as needed?
4.16.12					Did communication interoperability existed for all responders?
4.16.13					Was evacuation and patient re-location implemented using ambulances?
4.16.14					Was the evacuation or relocation of patients effective?
4.17.0					***Medical Surge (Provide Medical Care)***
4.17.3					Personnel demonstrated competencies defined by their given healthcare professions to address diagnosis, treatment, and reporting?
4.17.4					Was the number of personnel that were available to augment medical treatment facilities adequate?
4.17.5					Was the number of beds that were available by casualty category (e.g. ICU, PEDs, general, burn) adequate?
4.17.6					Was the number of alternate care centers established adequate?
4.17.7					Was their an adequate amount of supplies, pharmaceuticals, and equipment needed to effectively support a facility's reported surge capacity?
4.17.8					Were patients successfully tracked?
4.17.9					Was PPE available to staff for the surge of patients encountered?
4.17.11					Was the number of functional hospitals that were available to support the incident adequate?
4.17.12					Did medical facilities have a plan for evacuation or decompression ?
4.17.13					Were evacuation or decompression plans effective?
4.17.14					Was the standard of care able to be maintained during the event?
4.18.0					***Medical Supplies Management and Distribution (Provide Medical Care)***
4.18.2					Was the time from the assessment of shortfalls to requests for needed supplies adequate (SNS)?
4.18.3					Was the time from request to arrival of needed supplies adequate?
4.18.5					The requirements of special needs populations were successfully met?
4.18.6					Was security adequately provided?
4.18.9					Were state or regional assets or resources adequately relocated to support incidents?
4.19.0					***Mass Prophylaxis (Distribute Prophylaxis)***
4.19.1					Were mass prophylaxis and vaccination plans successfully implemented?
4.19.2					Was accurate and timely public information made available through multiple channels and venues regarding the location of these sites?
4.19.3					Were sufficient competent personnel available to staff dispensing centers and vaccination sites?
4.19.6					Was a separate prophylaxis-dispensing site designated for responders and their families?
4.20.0					***Mass Care (Sheltering, Feeding, and Related Services) (Provide Mass Care)***
4.20.1/4/6					Did all shelter residents (including special needs) transition from shelter back to original home facility, alternative accommodations and/or interim housing prior to shelter closure?
4.20.4					Was public information regarding mass care (sheltering, feeding, & related services) made available throughout the incident through multiple channels and venues?
4.20.5					Was the special needs shelter plan successfully implemented?
4.20.7					Was a pet care/handling plan implemented for sheltering of pets?
4.21.0					***Fatality Management (Manage Fatalities)***
4.21.1					Were families able to be contacted?
4.21.2					Were victims able to be identified?
4.21.3					Were DMORT resources available?
4.21.5					Was the DMORT response adequate and proactive?
4.21.6					Was coordination between medical examiner/coroner and public safety personnel established?
4.21.7					Was personal effects and evidence correctly managed?
4.21.8					Were remains handled with appropriate disposition?
4.21.9					Were remains properly decontaminated?
4.21.12					Were locations for a temporary morgue near incident site identified?
4.21.13					Was sufficient PPE available to protect workers involved in decontamination, identification, post mortem examination, disposition, etc. of contaminated bodies?
4.21.14					Was a plan for temporary storage of remains activated?
4.21.15					Were body remains effectively decontaminated?
4.21.16					Was coordination between medical examiners and emergency operations center (EOC) established?
4.21.17					Was the State Medical Examiners (ME) office included in the emergency operation center?
4.21.18					Was the ME office consulted and included in all fatality management efforts?
4.21.19					Was a victim search and recovery plan established and utilized?
4.21.20					Was a victim labeling system established and utilized during search and recovery efforts?
4.21.21					Were adequate personnel available for search and recovery efforts?
4.21.22					Were victim collection points established for temporary storage of victims awaiting transport to the morgue facility?
4.21.23					Was a system established for transportation of recovered victims to the morgue facility?
4.21.24					Was adequate numbers of refrigerated trucks available for storage and transportation of victims to the morgue facility?
4.21.25					Was a system established with the medical facilities/triage areas to ensure all hurricane-related deaths (including delayed deaths) were reported to the ME Office?
4.21.26					Was a ME protocol established as to the handling of the medical facility hurricane-related deaths?
4.21.27					Were collection points established at medical facilities/triage areas for storage of all hurricane-related victims prior to their transport to the ME facility if needed per protocol?
4.21.28					Was a Family Assistance Center (FAC) established ?
4.21.29					Was a representative of the Medial Examiners office assigned to the FAC?
4.21.30					Was a Family Victim Identification Center established for collection of antemortem identification information?
4.21.31					Was an autopsy protocol established for the victims?
4.21.32					Did the autopsy protocol include handling of body part and tissue fragments?
4.21.33					Was a death certificate protocol established addressing uniformity and standardization of terminology of all victims?
4.21.34					Was a fatality data collection system established to ensure proper documentation of victims ID information, personnel effects, examination, toxicology, cause and manner of death and disposition prior to release of the victim?
4.21.35					Was a record of disaster related obligations,work hours and expenditures maintained?
4.21.36					Was a system established for the handling of non-hurricane related Medical Examiner deaths?

(Very Last Question) How well prepared were you for the tasks you were assigned during Hurricane Katrina response?

1 2 3 4 5 6

Minimum Extensive

APPENDIX E
Mississippi Department of Health
Katrina After Action Report
Community Assessment Tool

MS AAR Community Assessment
NCDPH

(1) Date: __/__/___ (2) Cluster No.: _____ (3) Survey No.: _____
(4) Interviewer Initials: _____ (5) Address: _____
(6) GIS Code: _____
(7) Name of contact person:_____(8) Telephone #: _____

10. [INTERVIEWER]: What type of dwelling is this?
____ 1 = single family 2 = mobile home 3 = 2-5 family 4 = 6 or more family 5 = FEMA Trailer 6 =other

11. Did you live in this county prior to Hurricane Katrina? _____ 1=yes 2=no (if no end interview)

13. Are you living in this residence because your home was damaged/destroyed by Hurricane Katrina? ____
1=yes 2=no 3=other reason 9=dk/nr

14.a How many people slept here last night? _____
14.b How many were less than 2 years old? _____
14.c How many were 65 years or older? _____

15.a Before the hurricane, were you instructed to make plans for contacting family members or someone who would have been concerned about you?
____ 1=yes 2=no [skip to 16] 9=dk/nr [skip to 16]

15.b Before the hurricane did you make plans to contact family members or a concerned person.
_____ 1=yes 2=no 3=don't have family/friends [skip to 16] 9=dk/nr [skip to 16]

15.c [IF YES] Were you able to make use of your plans to contact family members or a concerned person during or after the hurricane?
_____ 1=yes --- go to #16
_____ 2=no
_____ 9=don't know/no response -- go to #16.

17.a Before the hurricane, were you instructed to notify local authorities about household members who have special needs, such as the elderly, people who are bedridden or anyone with a disability?
_____ 1=yes 2=no [skip to 18] 9=dk/nr [skip to 18]

17.b Did you have any members in your residence before the hurricane with special needs?
_____ 1=yes 2= no [if no, skip to 17.e 9=don't know [skip to 17.e]

17.c [IF YES] Did you notify local authorities *before the hurricane* about household members with special needs?
_____ 1=yes 2=no 9=dk/nr

18.a Before or after the hurricane were you given information about food safety such as discarding food that had not been refrigerated or that had come in contact with flood water?

_____ 1=yes 2=no [skip to 19] 3=dk /nr [skip to 19]

18.b Did you make use of information about food safety such as discarding food that had not been refrigerated or that had come in contact with flood water?
_____ 1=yes [skip to 19] 2=no 3=did not have one [skip to 19] 9=dk/nr

20. Before or after the Hurricane were you given information about drinking water safety such as whether your water supply was safe to drink, and how to make water safe to drink?
_____ 1=yes 2=no [skip to 20] 9=dk/nr [skip to 20]

20.a Before or after the hurricane were you instructed to avoid exposure to mosquitoes by using repellants, avoiding outdoor activity at dusk and dawn, and ridding your yard of standing water?
_____ 1=yes 2=no [skip to 21] 9=dk/nr [skip to 21]
20.b [IF YES] Did you make use of the recommendations to avoid exposure to mosquitoes by using repellants, avoiding outdoor activity at dusk and dawn, and ridding your yard of standing water?
_____ 1=yes 2=no 9=dk/nr

21. Before or after the hurricane were you told that it is safer to use battery powered lights rather than candles?
_____ 1=yes 2=no [skip to 22] 9=dk/nr [skip to 22]

21.b [IF YES] Did you follow the recommendation to use battery powered lights rather than candles?
_____ 1=yes 2=no 3=dk/nr

22.a Before or after the Hurricane were you instructed on how to safely use and locate gasoline powered generators so that the exhaust could not enter your home?
_____ 1=yes 2=no [skip to 23] 9=dk/nr [skip to 23]

22.b Did you use a gasoline powered generator after the hurricane?
_____ 1=yes 2=no 3=didn't have one [go to #23] 9=dk/nr [go to 23]

22.c [IF YES] Did you follow the instructions on how to locate a gasoline powered generator so the exhaust did not enter your home?
_____ 1=yes 2=no 9=dk/nr

23.a Before or after the Hurricane, were you made aware of evacuation procedures in your community?
_____ 1=yes 2=no [skip to 24] 9=dk/nr [skip to 24]
23.b [IF YES] Did you follow the procedures on how to evacuate or to stay in your if instructed to do so ?
_____ 1=yes [go to #24] 2=no 9=dk/nr [go to #24]

24.a Were you notified about shelter locations in your community?
_____ 1=yes 2=no [go to #25] 9=dk/nr [go to #25]

24.b [IF YES] Prior to or after the hurricane?
_____ 1=prior to 2=after 9=dk/nr

25. Did you or anyone in your household go to a shelter?
_____ 1=yes 2=no 9=dk/nr

26. Before to the hurricane, were you made aware of plans for emergency response at your children's school?
___ 1=yes 2=no 3=don't have school-aged children 9=dk/nr

27. Prior to the hurricane, were you made aware of plans for emergency response at your workplace?
___ 1=yes 2=no 3=don't work 9=dk/nr

28. After or during the hurricane, did you volunteer to support any emergency response activities?
___ 1=yes 2=no 9=dk/nr

29. What was the *most important or useful* source of preparedness and response information you received *before the hurricane*?
_____ 1 = Newspaper 2=Radio 3=TV 4=Internet 5=Flyers/Brochures 6=Church or Community Group 7=Family, Friends, Neighbors 8=Other 9=dk/nr

30. What was the most important or useful source of preparedness and response information you received *after the hurricane* ?
_____ 1 = Newspaper 2=Radio 3=TV 4=Internet 5=Flyers/Brochures 6=Church or Community Group 7=Family, Friends, Neighbors 8=Other 9=dk/nr

31.a Was anyone in this household injured as a result of this hurricane?
_____ 1=yes 2=no [go to #32] 9=dk/nr [go to #32]

31.b [IF YES] Would describe the injury as:
_____ 1=Minor 2=Serious 3=Fatal?

32.a Has anyone in this household become sick since the hurricane?
_____ 1=yes 2=no [go to end] 9=dk/nr [go to end]

32.b. [IF YES] Do you believe the illness was related to the hurricane?
____ 1=yes 2=no 9=dk/nr

That was the last question. Thank you very much for helping us. We are grateful for your help.

APPENDIX F
Mississippi Department of Health
Katrina After Action Report
Community Assessment Tool Coastal Version

MS AAR Community Assessment
NCDPH

Date: __/__/___ Cluster No.: _____Survey No.: _____Interviewer Initials: _____
Address: _____
Name of contact person:_____
Telephone #: _____

1. What type of dwelling is this?
_____ 1 = single family 2 = mobile home 3 = 2-5 family 4 = 6 or more family 5 = FEMA Trailer 6 =other

2. Did you live in this county prior to Hurricane Katrina? _____ 1=yes 2=no (if no end interview)

3. Are you living in this residence because your home was damaged/destroyed by Hurricane Katrina?
____ 1=yes 2=no 3=other reason 9=dk/nr

3a. How many people slept here last night? _____

3b. How many were less than 2 years old? _____

3c. How many were 65 years or older? _____

4a. Before the hurricane, were you instructed to make plans for contacting family members or someone who would have been concerned about you?
____ 1=yes 2=no [skip to 5] 9=dk/nr [skip to 5]

4b. Before the hurricane did you make plans to contact family members or a concerned person.
_____ 1=yes 2=no 3=don't have family/friends [skip to 5] 9=dk/nr [skip to 5]

4c. [IF YES] Were you able to make use of your plans to contact family members or a concerned person during or after the hurricane?
_____ 1=yes --- go to 5 2=no 9=don't know/no response -- go to 5.

5.a Before the hurricane, were you instructed to notify local authorities about household members who have special needs, such as the elderly, people who are bedridden or anyone with a disability?
_____ 1=yes 2=no [skip to 6] 9=dk/nr [skip to 6]

5.b Did you have any members in your residence before the hurricane with special needs?
_____ 1=yes 2= no (if no, skip to 6) 9=don't know [skip to 6]

5.c [IF YES] Did you notify local authorities *before the hurricane* about household members with special needs?
_____ 1=yes 2=no 9=dk/nr

6.a Before or after the hurricane were you given information about food safety such as discarding food that had not been refrigerated or that had come in contact with flood water?
_____ 1=yes 2=no [skip to 7] 3=dk /nr [skip to 7]

6.b Did you make use of information about food safety such as discarding food that had not been refrigerated or that had come in contact with flood water?
_____1=yes [skip to 7] 2=no 9=dk/nr

7. Before or after the Hurricane were you given information about drinking water safety such as whether your water supply was safe to drink, and how to make water safe to drink?
_____ 1=yes 2=no 9=dk/nr

8.a Before or after the hurricane were you instructed to avoid exposure to mosquitoes by using repellants, avoiding outdoor activity at dusk and dawn, and ridding your yard of standing water?
_____ 1=yes 2=no [skip to 21] 9=dk/nr [skip to 21]

8.b [IF YES] Did you make use of the recommendations to avoid exposure to mosquitoes by using repellants, avoiding outdoor activity at dusk and dawn, and ridding your yard of standing water?
_____ 1=yes 2=no 9=dk/nr

9a. Before or after the hurricane were you told that it is safer to use battery powered lights rather than candles?_
____ 1=yes 2=no [skip to 10] 9=dk/nr [skip to 10]

9.b [IF YES] Did you follow the recommendation to use battery powered lights rather than candles?
_____ 1=yes 2=no 3=dk/nr

10.a Before or after the Hurricane were you instructed on how to safely use and locate gasoline powered generators so that the exhaust could not enter your home?
_____ 1=yes 2=no [skip to 23] 9=dk/nr [skip to 11]

10.b Did you use a gasoline powered generator after the hurricane?
_____ 1=yes 2=no 3=didn't have one [go to #23] 9=dk/nr [go to 11]

10.c [IF YES] Did you follow the instructions on how to locate a gasoline powered generator so the exhaust did not enter your home?
_____ 1=yes 2=no 9=dk/nr

11.a Before or after the Hurricane, were you instructed on procedures for evacuating your community or sheltering in place?
_____ 1=yes 2=no [skip to 12] 9=dk/nr [skip to 12]

11.b [IF YES] Did you follow the procedures on how to evacuate or shelter in place?
_____ 1=yes [go to #12] 2=no 9=dk/nr [go to #12]

12.a Were you notified about shelter locations in your community?
_____ 1=yes 2=no [go to #13] 9=dk/nr [go to #13]

12.b [IF YES] Prior to or after the hurricane?
_____ 1=prior to 2=after 9=dk/nr

13. Did you or anyone in your household go to a shelter?
_____ 1=before 2=after 9=no/dk/nr

14. Before the hurricane, were you made aware of plans for emergency response at your children's school?
___ 1=yes 2=no 3=don't have school-aged children 9=dk/nr

15. Before the hurricane, were you made aware of plans for emergency response at your workplace?
___ 1=yes 2=no 3=don't work 9=dk/nr

16. After or during the hurricane, did you volunteer to support any emergency response activities?
___ 1=yes 2=no 9=dk/nr

17. What was the *most important or useful* source of preparedness and response information you received *before the hurricane*?
_____ 1 = Newspaper 2=Radio 3=TV 4=Internet 5=Flyers/Brochures 6=Church or Community Group
7=Family, Friends, Neighbors 8=Other 9=dk/nr

18. What was the most important or useful source of preparedness and response information you received *after the hurricane* ?
_____ 1 = Newspaper 2=Radio 3=TV 4=Internet 5=Flyers/Brochures 6=Church or Community Group
7=Family, Friends, Neighbors 8=Other 9=dk/nr

19a. Was anyone in this household injured as a result of this hurricane?
_____1=yes 2=no [go to #20] 9=dk/nr [go to #20]

19b. [IF YES] Would you describe the injury as:
_____1=Minor 2=Serious 3=Fatal

20a. Has anyone in this household become sick since the hurricane?
_____1=yes 2=no [go to end] 9=dk/nr [go to end]

20b. [IF YES]Do you believe the illness was related to the hurricane?
___ 1=yes 2=no 9=dk/nr

21. What was your primary source of health and medical care before the hurricane?
___ 1= urgent care clinic 2= hospital/emergency room 3= private doctor 4= public or free clinic 5=dk/none

22. What was your primary source of health or medical care for the first 2 months after the hurricane?
___ 1= tent or mobile hospital 2= same as before the hurricane 3= dk/none

23. Did you receive information about temporary health care facilities in your community after the hurricane?
___ 1= yes 2= no 3= dk/nr

APPENDIX G
Mississippi Department of Health
Katrina After Action Report
Key Responder Demographics

Key Responder Interview Data

Table 1: Public Health Professional Participants in Key Responder Interviews

POSITION	NUMBER OF RESPONDENTS
Nursing	12
Management/Policy Analysis	9
Environmental/Occupational Health	5
Med Director/Physician	5
Health Director	3
Non-Health Professional	2
Emergency Response Coordinator	3
Social Work	1
Clerical/Admin	1
Other	16
Total	57

Table 2: Medical Professional Participants in Key Responder Interviews

POSITION	NUMBER OF RESPONDENTS
EMT/Paramedic	16
Physician	5
Nurse	3
Emergency Management	3
Pharmacy	2
Administration	2
Other	8
Total	39

Table 3: Number of Years in Current Position

YEARS	NUMBER OF RESPONDENTS	% of Respondents
Less than 1 Year	14	15
1-2 years	19	20
3-5 years	31	34
6 or more years	29	31
TOTAL	93	100

Table 4: Key Responder Place of Work in Daily Job

ORGANIZATION	NUMBER	% of Respondents
State Health Department	35	38
District Health Department	17	18
Emergency Medical Service	17	18
Hospital	6	7
Other State (outside MS)	3	3
Other Organization	12	13
No Response	3	3
TOTAL	93	100

Table 5: Key Responder Hurricane Katrina Work Location

LOCATION	NUMBER OF RESPONDENTS	% of Respondents
State Health Department	27	29
County Emergency Operations Center	12	13
EMS--AMR	11	12
Local Hospital	8	9
District Health Department	6	7
State Forward Command	5	5.4
Multiple	5	5.4
DMORT	3	3
EMS--Arcadia	2	2.1
Local Shelter	2	2.1
Other	12	13
Total	93	100

Table 6: Key Responder Hurricane Katrina Function

FUNCTION	NUMBER OF RESPONDENTS	% of Respondents
Field Operations	24	26
Operations	20	22
Logistics	11	12
Command	11	12
Multiple	9	9
Medical Control	6	7
Planning	3	3
Other	9	9
TOTAL	93	100